

BY AIR POWER ALONE: AMERICA'S STRATEGIC

AIR WAR IN CHINA, 1941–1945

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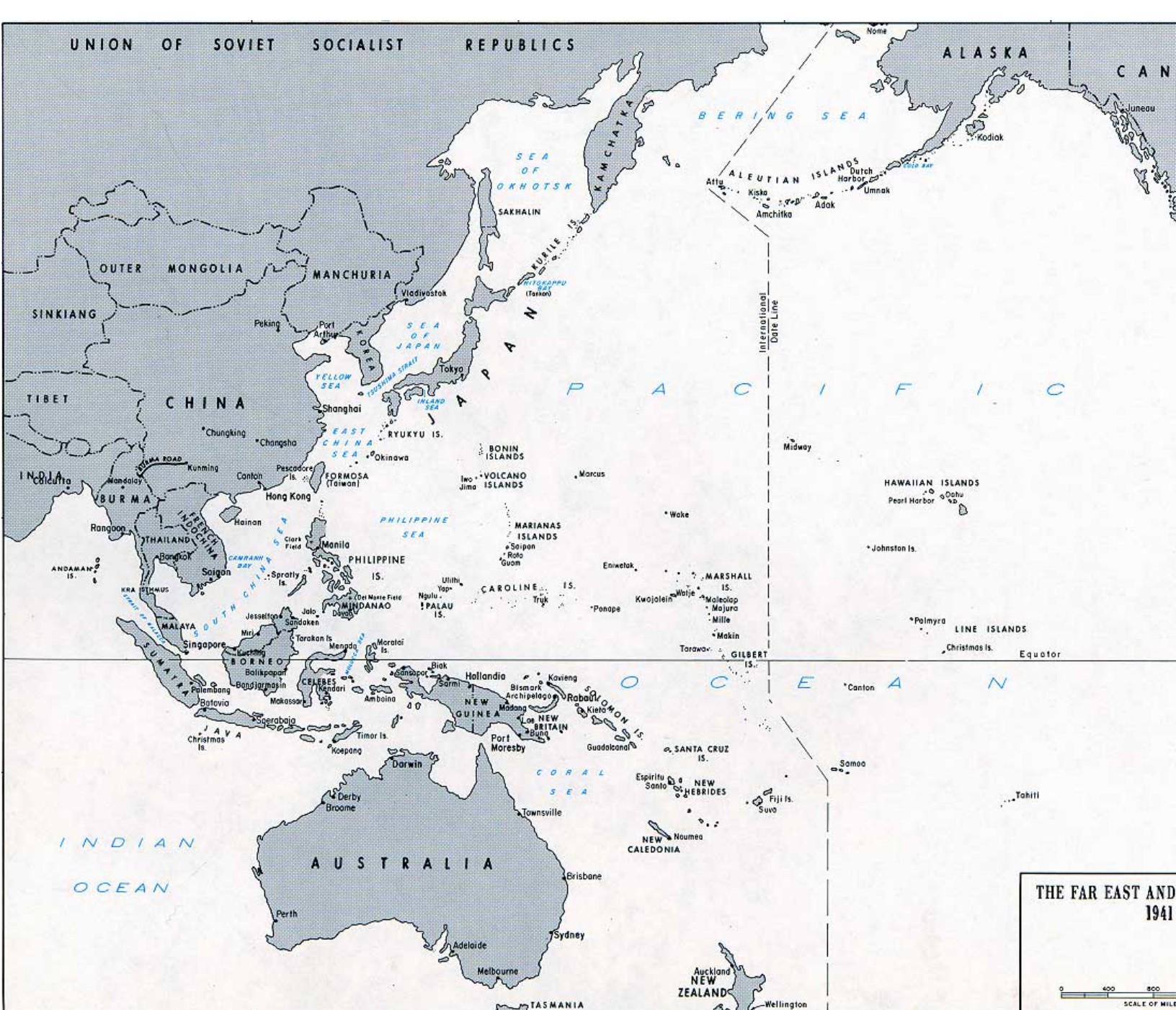
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During World War II, the Army Air Force waged three strategic air offensives in and from China against Japan. At first, the Flying Tigers and 10th Air Force constituted the whole of American aid to China, but the effort soon expanded. Supported by Chiang Kai-shek, Claire Chennault and his 14th Air Force waged an anti-shipping campaign, to which the Japanese Imperial Army responded with Operation Ichigo and against which Joseph Stilwell accurately warned. 20th Bomber Command used B-29s to wage Operation Matterhorn, failed, and later conducted PACAID missions. 14th Air Force then waged a counterproductive transportation campaign as The Pacific War, also known as the Greater East Asian War, ended. Events in the China-Burma-India and China Theaters provide lessons in logistics, targeting, training, and air-ground cooperation that are applicable in the post-Cold War era.



CHAPTER 1

ANSHAN II AND THE AIRPOWER THEATER

For Major General Curtis LeMay, September 8, 1944, was a day unlike any other day. LeMay spent much of his twelfth day as the commanding general of the Twentieth Bomber Command flying in a B-29 Superfortress high over Japanese-occupied China, leading his wing in their second attack against the coke ovens of the Showa Steel Works near Anshan, Manchuria. Already a noted bomber commander from the European Theater of World War II, LeMay took command of the Twentieth from its previous, interim commander, Brigadier General Laverne Saunders, with orders to increase the pace and effectiveness of Operation Matterhorn, the Twentieth's operations against the Japanese steel industry. General Henry Arnold, commander of the United States Army Air Force, expected the world's heaviest and longest ranged operational bomber force to begin in earnest, under LeMay's guiding hand, the destruction of the inner sanctums of the Japanese Empire.¹

The men of the Twentieth Bomber Command grew steadily more excited during the three weeks between their August 20, 1944 attack against Yawata, Japan, and the command's eighth and next mission, Anshan II, on September 8, 1944. As the B-29s ceaselessly droned back and forth across the Himalayan Mountains, hauling the supplies

¹1LT Carl Prestin, *XX Bomber Command, History for Sept. 1944, Our Mission*, in microfilm A7760 (Maxwell Air Force Base, AL: Air Force Historical Research Agency); Joint Target Group, *Air Target Index-Japanese War, Numerical Target Index, Objective Area 93:2-Manchuria E (Manchuria)*, in microfilm M1653, Roll 2 (Washington, DC: National Archives); Richard Kohn and Joseph Harahan, eds., *Strategic Air Warfare, An Interview with Generals Curtis E. LeMay, Leon W. Johnson, David A. Burchinal, and Jack J. Catton* (Washington, DC: Office of Air Force History, United States Air Force, 1988), 21–73; MG Haywood Hansell, *The Strategic Air War Against Japan* (Maxwell AFB, AL: Air Power Research Institute, Air War College, 1980), 45; Murray Green, Outline of "Dear Generals" Book, in microfilm 43835 (Colorado Springs, CO: Air Force Historical Research Agency).

that the support sections of the command steadily loaded onto the planes in India and unloaded from them in China, a crowd of seemingly out-of-place officers grew at the Twentieth's bases around Chengtu, China. Every colonel who could get away from his job in either India or China seemed to want to ride along for the big show. The arrival of Major General LeMay presaged big things for the Twentieth and when the weather forecasters and the command's logisticians agreed that September 8, 1944, would be a good day, the men heard the order to attack and responded with enthusiasm. Everyone hoped that the endless, grinding task of hauling supplies would begin to end and that they could begin to travel more quickly the long, dangerous road to the destruction of Japan.²

The evening of September 7, 1944, brought renewed confidence from all sections of the Twentieth Bomber Command. The weather section reported that the next day's weather over the target area would be as nearly perfectly clear as could be hoped for. The ground crews finished loading most of the giant bombers and repairing the last, nagging maintenance problems that appeared so regularly in the highly complex machines. The last straggling aircraft returned from India that day too, and the crews hurried to ready them for the next day's mission even as darkness fell across Western China. The air crews endured their rest periods and wondered what the next day would bring while the commanders already knew too many details to do anything but worry. The Twentieth's record lent no one any reasons to be sanguine about the next day's mission.³

²Kohn and Harahan, *Strategic Air Warfare*, 55–58; 1LT Carl Prestin, *Forward Echelon Detachment, XX Bomber Command, August History*, in microfilm A7760 (Maxwell Air Force Base, AL: Air Force Historical Research Agency); Prestin, *Sept. 1944*.

³Ibid.

Sanguine or not, the men of the Twentieth Bomber Command performed exceptionally well during Anshan II. Aircrews took advantage of exceptionally clear weather to assemble into better than average formations, though few formations achieved eight aircraft in size, let alone the prescribed twelve aircraft that the men trained for. Again because of clear weather, ninety of one hundred fifteen aircraft that took off that morning found and bombed the Showa Steel Works, a substantial improvement upon the Twentieth's record to date, and most made visual bombing runs over unusually light and scattered clouds. Light opposition combined with minimal mechanical trouble and a low rate of crew errors to destroy a comparatively minimal four of the Twentieth's aircraft, with clear weather again helping all aircraft, this time to find their way home or to another safe airbase.⁴

While over the Showa Steel Works, the Twentieth Bomber Command achieved exceptionally accurate results due to a combination of favorable circumstances. The combination of the Twentieth's July 29, 1944 mission to Anshan and Anshan II, destroyed six and damaged two of the seventeen coke oven batteries at the Showa facility. September 8, 1944, found the Twentieth over Anshan on one of the approximately three mid days per September during which the area experienced generally clear skies and on which the Twentieth's bombardiers could bomb as they trained, visually, rather than resorting to radar bombsights for which the Twentieth lacked adequate training and manuals. Clear weather and the Twentieth's consequently

⁴Ibid.; W. Youden, "Formations Flown in Combat by XX BC," RG 18, Sk 190, R 60, C 10, Sf 6, B 148, National Archives; Wesley Craven and James Cate, eds., *The Army Air Forces in World War II*, 7 vols. (Chicago: University of Chicago Press, 1948–58), vol. 5: *The Pacific: Matterhorn to Nagasaki: June 1944 to August 1945*, 115–6; Joseph Kuzman, "Memorandum to Chief of Staff, Twentieth Air Force, Preliminary Analysis of Fuel Consumption and Bomb Loads on B-29 Missions No. 1 to and including No. 15, XX Bomber Command," RG 18, Sk 190, R 60, C 10, Sf 7, B 148, National Archives.

improved formations further aided the Twentieth's accuracy because the bombardiers trained and aimed for a twelve aircraft formation; formations closer to twelve aircraft achieved more accurate results because their bomb patterns centered better on the targets.⁵

The exceptional results of Anshan II helped to prove the failure of Operation Matterhorn. The Twentieth Bomber Command could, if it achieved results similar to those of Anshan II every time it attacked, destroy every Japanese coke oven within reach within two or three months. The Twentieth could not achieve those results however, because only blind luck put a rare day of clear weather onto the calendar immediately after the Twentieth accumulated a stockpile of supplies and aircraft in China and performed the maintenance required to conduct a mission and before a less lucky mission wasted laboriously stockpiled fuel. The September 1944, meeting of the Committee of Operations Analysts in Washington recognized the achievement of Anshan II but also recognized that if the Twentieth could not repeat such performances in rapid succession then the war would end before the attack against the Japanese steel industry could bear fruit. Anshan III, on September 26, 1944, failed to inflict noticeable new damage, due largely to total cloud cover over the target, so the Committee of Operations Analysts recommended, and General Arnold ordered, that Operation Matterhorn end. Thus, the unusual success of Anshan II marks the failure of the second, and most ambitious, of

⁵“Minutes of Meeting of COA, 14 September 1944, 9:00AM,” in microfilm 43835 (Colorado Springs, CO: Air Force Historical Research Agency); Craven and Cate, *Matterhorn*, 115–6; Prestin, *Sept. 1944*; BG Laverne Saunders, *Tactical Doctrine of 20BC* (Washington, DC: Twentieth Bomber Command, 1944); Hugh Miser, “The Proportion of Bombs Expected to Fall in a Target Area,” RG 18, Sk 190, R 60, C 10, Sf 7, B 148, National Archives; Operations Analysis Division, Twentieth Air Force, “Visual Bombing Through Partial Cloud Cover,” RG 18, Sk 190, R 60, C 10, Sf 7, B 148, National Archives.

three strategic air offensives that the United States Army Air Force conducted in China during World War II.⁶

During the course of World War II, the United States Army Air Force attempted three separate and distinctly unwise strategic air offensives in and from China. These three efforts consumed substantial resources that could have rendered substantial assistance to the Allied war effort but that went instead to China, where poor planning and political considerations sent them on a quest that geographic and logistical realities made impossible to complete. In China, the United States Army Air Force repeatedly ignored the principles of war and common sense while attempting to work with China's ruling Kuomintang Party and the Chinese Army, neither of which conducted strategically significant offensive activities within China against the Japanese between 1941 and 1944. The resulting effort seemed to provoke, with each step toward victory, a Japanese response that pushed the China Theater two steps closer to defeat. In the early twenty-first century, with diplomacy often backed by air strikes and with militaries shrinking and heavily committed across the globe, air power increasingly takes the premier role in such conflicts as those in Bosnia and Kosovo and against the Osama bin Ladin terrorist network. The lessons that the United States government learned in China during World War II may be of use to diplomats and fighting forces alike, when air power appears to be either the only, or at least the most practicable, solution to international crises.

In early 1942, with the Japanese armed forces rampaging through the Pacific Ocean and pushing into the Indian Ocean and Burma, President of the United States Franklin Roosevelt and other leaders of the United States decided that they must aid

⁶*Meeting of COA, 14 September 1944*; Twentieth Air Force, "Visual Bombing," Prestin, *Sept. 1944*; Craven and Cate, *Matterhorn*, 117–8, 133.

China. A minimal investment in aid to China could secure the large dividend of tying down significant Japanese forces there and of denying to the Japanese the use of free China's resources. With that realization and decision, the trickle of aid that began to flow from the Western Allies to China in late-1937, after the Japanese invasion of China, began to grow steadily and, by 1945, became a torrent. At first the aid came in small amounts and served defensive purposes in accordance with long-standing principles of war, but by mid-1943, the United States Army Air Force began to risk disaster in China by conducting unsustainable and provocative offensives from insecure Chinese bases.

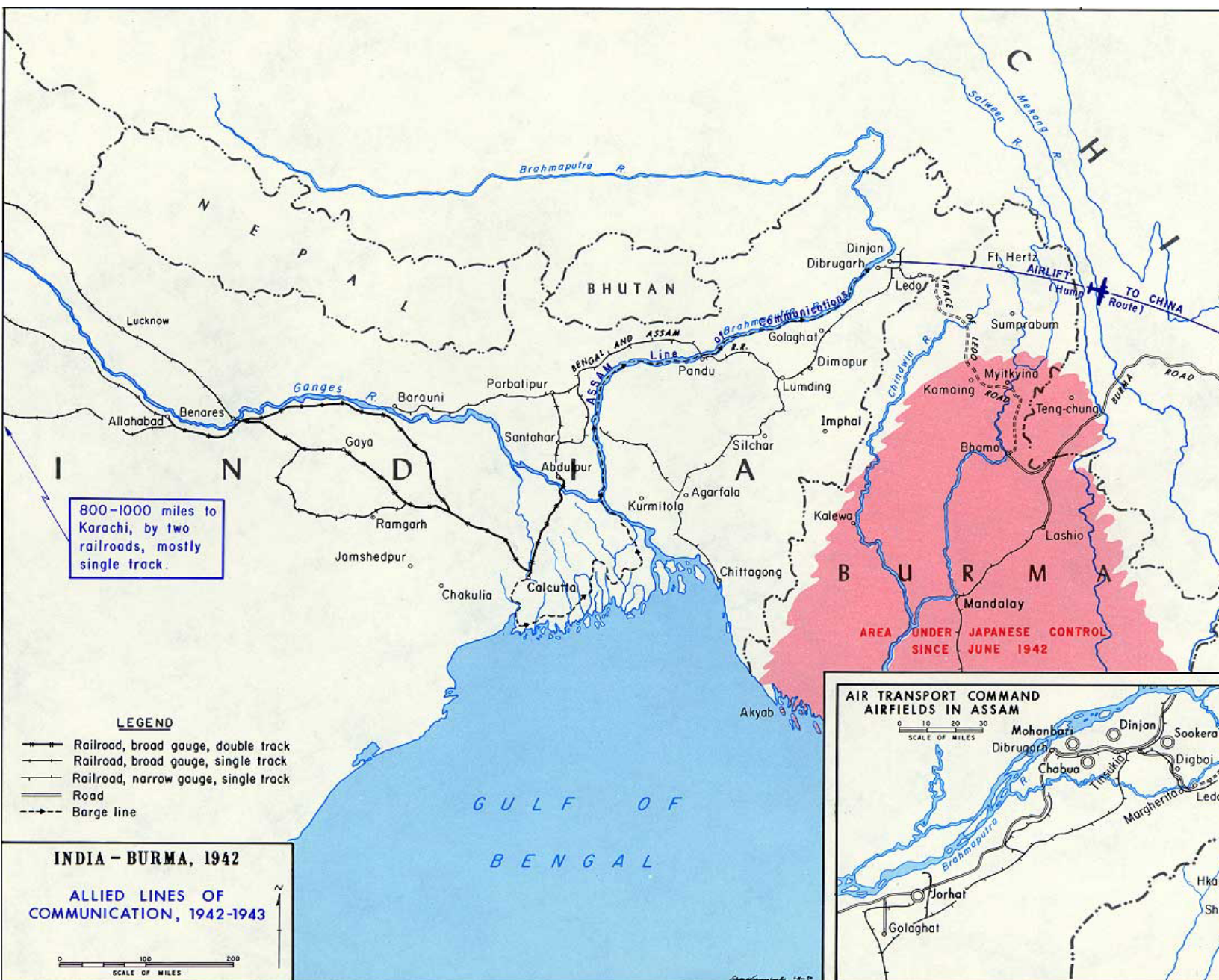
In mid-1943, General Claire Chennault's still tiny Fourteenth Air Force began an anti-shipping campaign from airbases in East China. With few aircraft and too little logistical support to operate those few aircraft properly, and with his airbases protected by the same Chinese Army that almost never stopped the Japanese during any of the numerous campaigns between 1937 and 1943, Chennault ostensibly planned to win the war in Asia. President Roosevelt joined Chennault in discounting the possibility that the Imperial Japanese Army might not allow the Fourteenth Air Force to win the war and might instead choose to seize Chennault's airbases or even overthrow the Kuomintang and force China out of the war as an organized power.

In early-1944, the first combat units of the new B-29 bombers began to flow toward the China Theater on a mission to destroy Japan's coke ovens, and consequently the Japanese steel industry. A combination of lack of security in China and a miscalculation of required training time resulted in hundreds of thousands of Chinese peasants laboring for months to build B-29 bases that ended up being too far from the ovens to allow effective B-29 operations against them. The abysmal logistical situation

made timely success impossible in any case and a Japanese offensive in China served up further difficulty for the B-29 units by exacerbating the logistical situation and threatening to overthrow the Chinese government and to overrun the logistical bases upon which the B-29s depended.

Finally, in early-1945, the Fourteenth Air Force began a campaign, loosely self-described as strategic, to hinder or prevent the ongoing transfer of Japanese forces from southern China to Northeast Asia. The Fourteenth attempted to use its long-awaited numerical superiority and ample logistical support to magnify the effects of previous strikes against Japanese lines of communication by continually sweeping the rail lines, roads, and rivers of much of occupied China, destroying every locomotive, rail car, river craft, ground vehicle, and draft animal that they could find. The only difficulty with the plan lay in that its success would be worse for the cause of the Allies than its failure. The Allied powers wanted Japanese forces to leave South Asia and southern and eastern China as quickly as possible, not to be delayed in their leaving or, even worse, persuaded to remain in place. In the longer term, the destruction by the United States Army Air Force of the lines of communication in occupied China could only weaken the Chinese economy and the Kuomintang's hold on power after the occupation ended, thus working against the very goal of the American mission to China—to aid the Kuomintang to become a friendly, major power in East Asia.





CHAPTER 2

DEVELOPMENTS: AMERICAN AIR POWER AND THE SITUATION IN EAST
ASIA INTO 1943

Between World War I and World War II, the United States Army Air Corp, renamed the United States Army Air Force in June 1941, developed doctrines for both the strategic and tactical uses of air power. Strategic and tactical plans both called for the combined efforts of the strategic and tactical forces to begin any war by attacking the enemy's aerial strength. Only after gaining air superiority did the Army Air Force expect to shift its primary efforts to other duties. The United States Army expected tactical air activity to take several forms: pursuit aviation against enemy aircraft in flight, counter-air bombings of enemy airbases, interdiction of enemy lines of communication, close tactical support of ground forces, and attacks against enemy ships. These tactical activities served either to protect friendly forces and assets or to assist friendly forces to succeed in their own operations. Strategic air operations played an altogether different role.⁷

The United States Army Air Force created strategic bombing doctrine that called for massive and prolonged bombing operations against industrial targets, the destruction of which would eventually eliminate the enemy's physical ability to wage war. Almost everyone expected this path—victory through air power—to be long. No one factory, however large or important, served as an indispensable cog in any enemy's industrial

⁷COL Harold McGinnis, *Responsibility for Air Intelligence*, in microfilm roll 43835 (Colorado Springs, CO: Air Force Historical Research Agency); Wesley Craven and James Cate, eds., *The Army Air Forces in World War II*, 7 vols. (Chicago: University of Chicago Press, 1948–58), vol. 1: *Plans and Early Operations: January 1939 to August 1942*, 33–71; H. Willmott, *B-17 Flying Fortress* (Secaucus, NJ: Bison Books, 1980), 24; Henry Arnold and Ira Eaker, *Army Flyer* (New York: Harper & Brothers, 1942), 263–6; Henry Arnold, *Global Mission* (New York: Harper & Brothers, 1949), 291.

system and an enemy could both improvise and rely on stockpiles for some time after even the most complete destruction of a given industry. Strategic planners expected to attack numerous targets across a range of industries before the enemy began, months or even years later, to run out of critical supplies.⁸

The United States Army Air Force's strategic bombing doctrine called for aircrew to attack enemy industrial facilities with precision, in daylight and from high altitude. Doctrine called for precision bombing because planners believed precision possible, and because precision seemed more efficient and less immoral than area bombing. Precision bombing mandated daylight operations because radar bombsights simply did not exist in the 1930s and proved less than perfect even in the middle 1940s. Daylight operations mandated high altitude operations because anti-aircraft artillery would savage large aircraft operating at the middle altitudes and because formations of large bombers could not safely operate at the treetop altitudes at which anti-aircraft artillery lost some of its flexibility and effectiveness. Daylight operations also mandated heavy defensive armaments and substantial durability because, although open cockpit biplane interceptors could not operate with significant effectiveness at high altitudes, more modern monoplane pursuit aircraft posed a potentially serious threat to bombers at any altitude.⁹

The United States Army Air Force regarded strategic bombing as likely to be an affair conducted at long range. The industrial heartlands of most potential adversaries lay beyond the reach of pursuit and light bombardment aircraft operating from likely base areas. Geography thus mandated that strategic bombers possess a long range and airplane

⁸Willmott, *B-17*, 9; Arnold and Eaker, *Army Flyer*, 263–6; Craven and Cate, *Plans*, 33–71.

⁹*Ibid.*, 33–71; Willmott, *B-17*, 18, 24–5.

manufacturers responded to Air Corps prodding by proposing four-engine aircraft that combined long-range capability with doctrinal requirements for a stable bombing platform, heavy defensive armament, high altitude capability, durability, and the perpetual desire for larger payloads. Army Air Force thinking thus separated light bombardment and pursuit aircraft, with their mere hundreds of miles of range, from strategic bombardment because planners expected the smaller aircraft to be able to reach few if any strategic targets. Planners hoped for, but did not count upon, escort aircraft and subsidiary bombardment efforts to aid the strategic air effort made by the United States in any future conflict: the Army Air Force planned to strategic bomb using four-engine bombers.¹⁰

The United States Army Air Force's doctrinal requirement for a four-engine bomber aside, the quest for such an aircraft did not begin to proceed smoothly or rapidly until 1939. In 1933 and 1934, the United States Army Air Corp made several, informal requests to aircraft manufacturing companies that they investigate the idea of designing four-engine bombers. On June 26, 1934, after the Boeing and Martin Companies submitted data in response to Army Air Corp requests, the Army let contracts to those two companies to conduct mock-up and wind tunnel tests to gather further data. Then, on August 22, 1934, the Army requested that the Boeing, Martin, and Douglas companies submit designs for four-engine bombers. In May 1935, the process seemed about to yield fruit when, after substantial discussion between the Army and the United States

¹⁰Ibid., 16–17; Kohn, *Strategic Air Warfare*, 21–25; Arnold and Eaker, *Army Flyer*, 263–6; Arnold, *Global Mission*, 149, 199, 225, 290–1.

Congress, Congress authorized the Army to purchase five hundred aircraft, including twenty-six four-engine and one hundred sixty-six two-engine bombers.¹¹

After the auspicious authorization of a five hundred aircraft purchase in May 1935, the United States Congress rapidly backpedaled and, in July 1935, reduced the United States Army's budget. In response to this funding cut the Army reordered its priorities, ordering thirteen of the new B-17, four-engine bombers from Boeing on January 17, 1936. The Army briefly continued with other projects, besides just the B-17, but in May 1936 the United States War Department cut another one hundred nine aircraft from the Army's budget, including all long-range bombing and reconnaissance aircraft except for the thirteen B-17s already ordered from Boeing. After further discussion within the Army, in August 1937 the Army decided not to issue any more contracts for four-engine aircraft until the B-17 project, and a single, experimental aircraft in the 1938 budget, proved themselves in trials. The Army Air Corp continued to try to win approval for four-engine aircraft projects but did not succeed until June 1938, when the War Department added another eleven B-17s to the 1939 budget. In June 1939, the United States Army Air Corp fielded exactly fourteen four-engine aircraft, with one of those serving only as an experiment.¹²

As the United States slipped into World War II, Congress rapidly increased military funding and industry rapidly increased production of military equipment. By 1942, the Army Air Force attempted to meet the demand for strategic bombers with two

¹¹Ibid., 133–54; BG L. Miller, *Memorandum for General Arnold, Subject: Development of 4-engine Bombers, 1933–1939*, April 15, 1943, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy).

¹²Ibid.; Arnold, *Global Mission*, 155–69.

types of aircraft: the long-awaited B-17 and the relative newcomer B-24. The B-17 Flying Fortress began the war in squadron service in the Philippine Islands and fared poorly, primarily due to a lack of both logistical support and secure bases. Soon thereafter, the B-24 Liberator came into service and from mid-1942 began to replace the B-17 in Pacific Ocean areas; the B-24 possessed the longer range of the two aircraft and long range proved to be of critical importance in the vast Pacific Theater. In Europe, against the German Air Force and the massed anti-aircraft artillery that protected German industrial installations, the B-17 proved to be the more battle worthy and became the more numerous of the two strategic bombers, though the B-24 also served in Europe in large numbers. B-24s, with their exceptionally long range, also served admirably as naval patrol aircraft, playing a large role in the Battle of the Atlantic and thus in making an Allied victory possible in Europe.¹³

The ultimate expression, during World War II, of the United States Army Air Force's tendency toward larger strategic bombers flowed from the conception, in the summer of 1939, of the Very Long Range project. The Army Air Force originally stated that the Very Long Range project would provide bombers to defend the United States by striking targets at great distances from the Americas. On December 2, 1939, the United States War Department authorized the Very Long Range project, ordering Major General Arnold, the chief of the Army Air Force, to create a bomber with a heretofore unheard of

¹³LTG Lewis Brereton, *The Brereton Diaries: The War in the Air in the Pacific, Middle East and Europe, 3 October 1941–8 May 1945* (New York: William Morrow, 1946), 71–72; GEN Theodore Milton, interview by CPT Timothy Kline, Department of History, United States Air Force Academy, May 30, 1974, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); LTG Henry Arnold, letter to MG George Kenney, October 8, 1942, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); Samuel Morison, *United States Navy in World War II*, 15 vols. (Boston: Little, Brown, 1948–93), *Vol. I, The Battle of the Atlantic, 1939–1943*, 240–51; Samuel Morison, *United States Navy in World War II*, 15 vols. (Boston: Little, Brown, 1948–93), *Vol. X, The Atlantic Battle Won, May 1943–May 1945*, 245; Arnold, *Global Mission*, 363.

tactical radius of action, eventually settled as fifteen hundred miles. Later military developments transformed the Very Long Range project into a source for a weapon that the Army Air Force could deploy against enemy industrial areas even if ideal base areas in potentially allied countries became unavailable for use. Scenarios for which Army Air force planners considered the Very Long Range project essential included bombing Germany from the Middle East or Japan from Alaska or Siberia. Simple recognition of geographical reality quickly disabused serious planners of notions of transoceanic bombing while weather and range killed ideas of bombing most of Japan from Alaska and diplomacy eliminated the likelihood of bombing anything from Siberia. Beyond these worst-case scenarios, the project served to provide a bomber with a tremendous load at shorter ranges, in case of better bases being available.¹⁴

In June 1940, Boeing and Consolidated-Vultee won Very Long Range project contracts to study experimental designs of what eventually became the B-29 and the B-32 respectively. Later in 1940, both of these companies won further contracts to proceed with work on prototypes of these aircraft. The United States Army Air Force Air Staff made almost constant changes to the requirements of the Very Long Range project, but Boeing still managed to find some success in its B-29 project. In view of the world crisis and of its own success, Boeing undertook to shorten the developmental time required for the B-29 from the previously standard five years to four and, in June 1941, won a contract to build fourteen production model B-29s. By January 1942, Army Air Force orders rose to five hundred aircraft and the B-29 became the first military aircraft ordered

¹⁴R. Hall, *Case Studies in Strategic Bombardment* (Washington, DC: Air Force History and Museums Program, United States Government Printing Office, 1998), 266–7; Green, Outline.

into full production in the United States before the producer even completed a prototype.¹⁵

Not unexpectedly, troubles plagued the B-29 throughout its early life. The United States Army Air Force made thousands of design changes in the engines alone between 1940 and 1943 and the progress of the aircraft suffered accordingly, especially when the first prototype crashed and killed its crew. Finally, in early 1943, the long-time commander of the Army Air Force, General Arnold became sufficiently concerned over the constant delays and ordered a cessation to changes in the B-29 design unless the change concerned actual flight safety. The project then moved forward more quickly and Boeing delivered the first production B-29 in July 1943. The B-29 continued to suffer from a variety of ailments, only some of which manifested themselves before the plane entered combat, but the crews of the new 20th Bomber Command finally began to train with their new steeds.¹⁶

The specifications in the contract that the United States Army Air Force let to Boeing, and Boeing's high-technology response to those specifications provided the Army Air Force with a truly advanced B-29 weapon system. The B-29 carried an unheard of standard armament of twelve fifty-caliber machineguns, including four mounted in a single turret, and one twenty millimeter cannon, all fired by means of remote, computerized sights from inside the aircraft's pressurized cabin. Four Wright R-3350-23 engines propelled the B-29 at a cruising speed of two hundred twenty miles per hour, to a

¹⁵Hall, *Case Studies*, 267.

¹⁶Arnold, *Global Mission*, 478; Kohn and Harahan, *Strategic Air Warfare*, 55; MG Kenneth Wolfe, interview by Columbia University Oral History Reports, in microfilm 43835 (Colorado Springs, CO: Air Force Historical Research Agency); Hall, *Case Studies*, 278.

ceiling of thirty-one thousand eight hundred fifty feet, and to a maximum range of five thousand eight hundred thirty miles. The engines themselves demonstrated a significant technical achievement by arranging eighteen cylinders in two radials of nine cylinders each and generating an amazing two thousand two hundred horsepower per engine. The B-29 measured ninety-nine feet long with a wingspan of just over one hundred forty-one feet, theoretically carried a crew of ten and up to twenty thousand pounds of bombs to a tactical radius of fifteen hundred miles, and weighed one hundred thirty-two thousand pounds when fully loaded. For crews, and especially for gunners accustomed to manhandling their guns in a two hundred plus mile per hour wind stream while wearing numerous layers of clothes and an oxygen mask, the B-29 represented a veritable heaven of technological advancement.¹⁷

The war in which the 20th Bomber Command and the B-29 finally came of age began long before the Very Long Range project ever touched paper as a proposal. In 1922, the Japanese Diet, the parliament of Japan, forced the Japanese Imperial Army to withdraw from Siberia by refusing to allocate funding for the adventure, a courageous action that began the alienation of the Japanese military from Japanese civilian rule. Throughout the 1920s, Japan's civilian government steadily reduced the Japanese military's funding and repeatedly entered into international agreements that the military believed to be unwise. The Japanese civilian government, for instance, returned control of the Shantung Peninsula to China and signed the Kellogg-Briand Pact in an attempt to outlaw war. The Washington Naval Conference also persuaded the Japanese civilian government to accept a navy that seemed inferior to those of the United States and Great

¹⁷Hansell, *Against Japan*, 99.

Britain, further alienating the Japanese military and persuading much of the Japanese population that the West intended to make and keep Japan a second class power.¹⁸

The foreign policy of the United States did not help Japan's civilian leadership to keep the Japanese military in check. When the United States Congress prohibited immigration from Japan, the Japanese people saw themselves lumped together with other groups into a category that the people of the United States seemed to label as undesirable. The insistence of the United States and United Kingdom that Japan limit itself to a navy only sixty percent the size of their own navies provided ammunition to Japanese radicals who portrayed the West as imperialist and racist and their own civilian government as weak and ignoble.¹⁹

By 1931, the civilian government's seemingly constant debasing of Japan led the Japanese military to begin to take matters into their own hands. According to Japan's constitution, Emperor Hirohito set the size of and served as the head of the Japanese military. The civilian government's usurpation of the Emperor's prerogative, even though Hirohito showed little sign of disputing the issue, cost the military its desired power and prestige and served as a basis for rallying military opposition to the civilian government. A group of relatively junior Japanese officers in the Kwantung territory that Japan leased from China led the way to glory by launching a small attack into Manchuria in an effort to reverse the military's downward spiral. The Japanese Kwantung Army, largely based

¹⁸Samuel Morison, *United States Navy in World War II*, 15 vols. (Boston: Little, Brown, 1948–93), *Vol. III, Rising Sun in the Pacific, 1931–April 1942*, 4–8.

¹⁹*Ibid.*, 9–11.

in Korea, then supported them because the generals refused to risk a Japanese defeat and the consequent loss of Japanese controlled territory and Japanese military prestige.²⁰

With Japan more or less at war against China, the Japanese constitution put substantially more authority into the hands of an increasingly aggressive Japanese military while the hapless Chinese watched Japanese forces divided their country. In the face of the Japanese attack and preoccupied with fighting communists within China, the Chinese government, led by the Generalissimo Chiang Kai-shek and the Kuomintang Party, encouraged the warlord of Manchuria to withdraw his forces to North China rather than fight the Japanese. The Japanese Imperial Army consequently and almost effortlessly seized the whole of the resource rich province of Manchuria with all of its heavy industry. The easy victory over both their own government and the Chinese did not satisfy Japan's soldiers and did not serve to adequately muzzle the Diet's criticisms.²¹

China's people did not accept Japanese aggression as easily as did the Kuomintang and the Japanese did not stop, as the Kuomintang hoped they would. A popular boycott of Japanese goods began in China soon after Japan invaded Manchuria and, in 1932, the Japanese attacked the city of Shanghai in a bid to break the boycott, but on this occasion the Kuomintang acceded to popular and warlord demand and stopped the Japanese with a tenacious defense. In 1933, the Japanese pounced again, simply moving in and taking over Jehol Province and huge portions of the Chahar and Hopei Provinces

²⁰Ibid., 10–12; Mark Royer, *The Dragon Breaks His Sleep: Events leading to China's War of Resistance* (Grinnell, IA: by the author, 1998), 7–20; Kent Greenfield, ed., *United States Army in World War II*, 89 vols. (Washington: Office of the Chief of Military History, Department of the Army, 1948–78), Charles Romanus and Riley Sunderland, *The China–Burma–India Theater*, 3 vols., vol. 1: *Stillwell's Mission to China*, 4–6.

²¹Ibid., 4–6; Morison, *Rising Sun*, 11–12; Royer, *Dragon*, 7–20.

against a Chinese resistance that showed no evidence of having a plan and that fell apart and gave up after a few, uncoordinated skirmishes. In 1937, after four more years of incremental Japanese military, economic, and political advances across north China, the Japanese military responded to signs of increasing Chinese resistance by invading China proper.²²

The Chinese people did not display displeasure about Japanese actions in a vacuum. Soon after the Japanese invaded Manchuria, the League of Nations condemned Japanese aggression and much of the world adopted a policy of non-recognition of the Japanese claim to the area. The Japanese military responded by withdrawing Japan from the League and installing a puppet to rule the new country of Manchukuo. Further Japanese aggression, including hundreds of bombings of citizens of the United States in mission stations across China, led to sanctions against Japan by much of the rest of the world. A number of Japanese civilian and senior military leaders also expressed dissatisfaction and even attempted to restrain the military, but after a spate of assassinations Japanese civilian resistance to Japanese military adventures declined markedly. Finally, Soviet and Mongolian forces engaged in a number of military encounters against expansionist Japanese and Manchukuoan military forces on mainland Asia in the late 1930s.²³

Unlike several earlier Japanese advances into China, the Chinese government, under Generalissimo Chiang and the Kuomintang, actively resisted the 1937 Japanese

²²Ibid., 7–20; Romanus and Sunderland, *Mission*, 4–6; Morison, *Rising Sun*, 14–18.

²³Ibid., 12–18; Royer, *Dragon*, 7–20; Romanus and Sunderland, *Mission*, 4–6; Edward Drea, *Nomonhan: Japanese-Soviet Tactical Combat, 1939*, Leavenworth Papers (Fort Leavenworth, KS: United States Army Command and General Staff College, 1981), 12–15.

invasion. While Chinese military operations led almost uniformly to disaster, much of the world still supported the Chinese position, usually for a mixture of idealistic and pragmatic reasons. Between 1937 and 1939, the Soviet Union delivered not only political support to China but also sent arms, hundreds of aircraft, and numerous aircrew to fight the Japanese in China. Western democracies too began to aid China, with intermittent military and economic aid in accordance with the military, political, and economic situations of the donor countries. Nonetheless, China could not stop the Japanese.²⁴

In the summer of 1941, Japanese bombers terrorized the Chinese Nationalist government's last urban refuges daily, weakening the hold of the Kuomintang over what remained of free China and spurring it to a new action. To stop these attacks, the Chinese government hired a group of American mercenaries, commanded by the retired United States Army Air Force Major Chennault, to act as an air interceptor force. Chennault organized the mercenaries as the American Volunteer Group and began to train them in Burma, using obsolescent P-40 aircraft that the British first received from the United States and then passed on to Chinese use as more advanced models became available. The American Volunteer Group entered combat for the first time in Burma, fighting against the Japanese invasion in December 1941, in an effort to protect the Burma Road, China's last remaining land connection to the Western democracies. The largely British and Indian ground forces beneath the American Volunteer Group collapsed in front of the Japanese advance and, in the Spring of 1942, Japanese forces seized virtually all of Burma, cut the Burma Road, and isolated China from land contact with any friendly country except the beleaguered Soviet Union. The American Volunteer Group performed

²⁴Craven and Cate, *Plans*, 78; Mark Royer, *War of Resistance* (Grinnell, IA: By the author, 1998).

well during the defeat, earning the nickname “The Flying Tigers” before leaving Burma to protect the Chinese end of an air route between India and China that, until 1945, served as the only means of commerce along which Western aid could flow to China.²⁵

Even after the debacle in Burma, the United States decided to continue to aid China, despite the small base upon which to build the effort and the vast new obstacles to overcome. Barely beginning the process of retooling its economy, the United States could have made use of scarce material in other theaters, where the difficulties towered less high than did the Himalayan Mountains. The United States did not, however, leave China to fend for itself; a “can do” attitude and the desire to hurt Japan and help the long-suffering Chinese prevailed over simple and pessimistic explanations of difficulties. President Roosevelt and his advisors also looked further ahead, hoping that a strong, nationalist China would evict the Japanese from the continent later in the war and then substitute for Japan as an Asian power in post-war East Asia. Roosevelt wanted to transform China into a powerful, friendly country and to use it to counter Soviet, British, and French colonial expansion. Roosevelt decided that the United States would support the Kuomintang and build up the Chinese military in order first to maintain China as an independent Allied country in the face of Japanese advances, then to assist to defeat Japan through offensive operations, and finally to fill the power vacuum resulting from that defeat.²⁶

²⁵Craven and Cate, *Plans*, 78; Daniel Haulman, *The High Road to Tokyo Bay* (Washington, DC: Air Force Historical Research Agency, 1993), 4–5.

²⁶Craven and Cate, *Plans*, 485–8; Romanus and Sunderland, *Mission*, 3–5, 151–90; GA George Marshall, GA Henry Arnold, and FA Ernest King, *The War Reports of General of the Army George C. Marshall, Chief of Staff; General of the Army H.H. Arnold, Commanding General, Army Air Forces; Fleet Admiral Ernest J. King, Commander-in-Chief, United States Fleet and Chief of Naval Operations* (Philadelphia: J.B. Lippincott, 1947), 209–10; James Burns, *Roosevelt: The Soldier of Freedom, 1940–1945* (New York: Harcourt Brace Jovanovich, 1970), 204–5, 375; Arnold, *Global Mission*, 302.

Despite the magnitude of the geographical obstacles and equipment shortages that hindered the program of aid to China, Chinese politics served as the fundamental difficulty that President Roosevelt's emissaries and generals encountered while attempting to aid China. The Chinese Communists rose like a tide, trickling around both Japanese and Nationalist resistance to rule areas displaying only marginal economic activity and Kuomintang or Japanese control. The communist menace preoccupied Generalissimo Chiang and the Kuomintang; they spent much of China's war effort against the communists rather than the Japanese, while semi-autonomous and often disgruntled provincial warlords made intermittent political waves that threatened Chiang's regime. Chiang responded to the warlords by diluting the Chinese officer corps with politically loyal but militarily ignorant appointees, resisting the formation of efficient military formations, and engineering political discord within individual Chinese cliques. The Nationalists managed to retain power throughout the war against Japan, a fact perhaps more surprising than how little they could or would do against the Japanese.²⁷

The United States planned to overcome these problems and almost immediately began both to amass American forces in China and to funnel assistance to the Chinese Nationalists. A relatively blind optimism on the part of numerous officials in Washington prevented an accurate assessment of the true problem facing the program to aid China: the Kuomintang did not seek to achieve objectives similar to those of the political leadership of the United States. Where the aid program that the United States sponsored

²⁷Romanus and Sunderland, *Mission*, 32–37; U.S. Army, Office of the Chief of Military History, "The Political Scene in China Theater, Chapter II USFCT History," RG 493, Sk 290, R 42, C 30, Sf 3–6, B 27, National Archives; U.S. Army, Office of the Chief of Military History, "Turning Point in China, Chapter VI USFCT History," RG 493, Sk 290, R 42, C 30, Sf 3–6, B 32, National Archives.

sought to build and use an effective Chinese military, the Kuomintang sought rather to siphon the material aid off for personal enrichment and future use against the communists, to minimize the effects of military educational aid that encouraged initiative and efficiency and thus created potential rivals who might attack the Kuomintang, and to preserve the portions of the Chinese military that seemed loyal to the Nationalists for future use against threats that someone else might not prove willing to fight. The Kuomintang resisted Japanese aggression for four and a half years before the United States entered the war and certainly desired victory over Japan, but the Kuomintang demonstrated little desire to achieve victory through the use of Chinese armed forces. Except for the Flying Tigers program, an idea sponsored and controlled by the Kuomintang that served the end of maintaining the Kuomintang's political support by appearing to protect China from the Japanese at little cost to the Chinese, political discord and corruption within China seemed to seep into, weigh down, and eventually rot away every American effort to help China.²⁸

In early 1942, five American four-engine bombers that escaped from the campaigns for the Philippine Islands and Java in the Netherlands East Indies (modern Indonesia,) fled to India to take up the struggle there. At about the same time, the Tenth Air Force headquarters, under Major General Lewis Brereton, arrived in India from the United States to command the American air effort in the China-Burma-India Theater. The United States Army Air Force absorbed the American Volunteer Group in May 1942 as the Twenty-third Pursuit Squadron, activated the China Air Task Force on July 4, 1942, and promoted the recently recalled Colonel Chennault, previously retired from the United

²⁸Romanus and Sunderland, *Mission*, 32–37; U.S. Army, “Political Scene;” U.S. Army, “Turning Point.”

States Army Air Corps as a Major, to Brigadier General to command it. During the first half of 1942, the Tenth Air Force received reinforcements and became a full-fledged, all-arms air force with pursuit (fighter), medium bomber, heavy bomber, and photography assets. Even by the diminutive standards of the United States in 1942, however, the Tenth still looked like a “poor cousin” because it lacked much of the staff, equipment, and simple numbers that higher priority air forces took for granted. For operational control, the Tenth Air Force split into two distinct sections: the China Air Task Force under Chennault, and an India Air Task Force.²⁹

The Tenth Air Force barely began its mission, to support China and attack Japanese lines of communication, before a crisis erupted in North Africa, pulling the Tenth’s attentions toward the Middle East. General Erwin Rommel led his mixed Italian-German Africa Corps deep into British controlled Egypt in an advance that threatened to seize the Suez Canal. On June 23, 1942, the United States War Department reacted to British political pressure and obeyed the “Europe first” Allied grand strategy; it ordered Brereton to take all seventeen of his heavy bombers and a scattering of his other assets to the Middle East. After Major General Brereton departed for the Middle East, leaving Brigadier General Earl Naiden in command of the Tenth, the remainder of the China Air

²⁹The five heavy bombers that formed the basis of the Tenth Air Force comprised one B-17, two B-24s, and two export versions of the B-24, designated LB-30. A B-17 group began arriving from the United States via Africa only days later, but did not entirely arrive before being diverted to other duties. Brereton, *Diaries*, 71, 108–9; COL Merian Cooper, interview on January 18, 1943, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); CPT L. Coats, interview on April 21, 1942, in microfilm 43835 (Colorado Springs, CO: Air Force Historical Research Agency); Craven and Cate, *Plans*, 395; Wesley Craven and James Cate, *The Army Air Forces In World War II*, 7 vols. (Chicago: University of Chicago Press, 1948-53), vol. 4: *The Pacific: Guadalcanal to Saipan: August 1942 to July 1944*, 409–29; Haulman, *High Road*, 6; Theodore White, ed., *The Stilwell Papers* (New York: Macfadden, 1962), 38, 41, 50, 65.

Task Force mustered fewer than 125 fighters and medium bombers, and the India Air Task Force deployed even fewer than that.³⁰

The Tenth Air Force did not lack only for aircraft; in early and middle 1942, the Tenth suffered from a variety of ailments. Due to the ongoing crisis in the Middle East, the Tenth's priority for replacements, reinforcements, and logistical support dropped dramatically and both the Japanese naval excursion into the Indian Ocean and the German submarine blitz against the Eastern seaboard of the United States claimed considerable portions of the remainder. The Tenth did receive a few aircraft reinforcements in mid-1942, but combat losses and severe maintenance difficulties continually eroded fighting strength. The Tenth operated without an adequate supply of spare parts, without manuals to find part numbers in order to request the proper parts, and with many mechanics drafted from other positions and undergoing on-the-job training. The Tenth also lacked any depot-level repair facilities and sent aircraft requiring major overhaul to Australia to use the facilities there, if the aircraft could make the trip. On April 8, 1942, the Tenth further increased its own difficulties, in obedience to its orders to support China, by joining the China National Aviation Corporation in the airlift into China over the Himalayan Mountains.³¹

While the India Air Task Force of the Tenth Air Force fought to assist British and Indian forces to defend India, the China Air Task Force sought to aid China, thus keeping

³⁰Brereton, *Diaries*, 108–9, 130–1; Romanus and Sunderland, *Mission*, 157.

³¹LTC Richard Carmichael, *Reports Relating to China Air Task Force*, in microfilm 43835 (Colorado Springs, CO: Air Force Historical Research Agency); CPT Vincent Snyder, *Reports Relating to China Air Task Force*, in microfilm 43835 (Colorado Springs, CO: Air Force Historical Research Agency); LTG Henry Arnold, letter to BG Earl Naiden, July 27, 1942, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); LTG William Tunner, *Over the Hump* (Washington, DC: Office of Air Force History, United States Air Force, 1985), 60; Marshall, *War Reports*, 209–10; Arnold, *Global Mission*, 302, 332.

China in the war on the Allied side, and to attack Japanese lines of communication. Early in World War II, the embryonic China Air Task Force actually served as the United States' aid to China, until the air lift over the Himalayas built enough capacity to haul both supplies for the American air units and for actual Chinese use. As such, Brigadier General Chennault designed the operations of the China Air Task Force to protect the supply route to the West and prevent Japanese bombers from terrorizing free Chinese cities. An aggressive commander, Chennault not only defended the Chinese capital city of Chungking and the airlift terminus of Kunming but also attacked the Japanese frequently. The China Air Task Force conducted an aerial guerilla war from a web of small bases in southern China, attacking airfields and shipping as far afield as Hong Kong and Hanoi. In eight months of attrition strategy air warfare, the China Air Task Force, never possessing even 125 total aircraft, destroyed some 200 Japanese planes and kept the Japanese off-balance and relatively ineffective.³²

The China Air Task Force fulfilled its strategic mission, visibly aiding China in order to keep the Chinese in the war, by using imaginative and effective tactics in widely scattered operations. The China Air Task Force also marginally contributed, by occasional anti-shipping strikes, to the destruction of the Japanese economy. The China Air Task Force's activity did not, however, represent strategic bombing in the classical sense; even after the China Air Task Force began to attack railway marshalling yards and industrial facilities in Indo-China and occupied China, the sporadic and dispersed effort could only have short-term, local effects. Given the weakness of his force, if Brigadier

³²Marshall, *War Reports*, 209–10; Duane Schultz, *The Maverick War: Chennault and the Flying Tigers* (New York: St. Martin's Press, 1987), 289; Craven and Cate, *Guadalcanal*, 409–29; John Kreis, ed., *Piercing the Fog: Intelligence and Army Air Forces Operations in World War II* (Washington, DC: Air Force History and Museum Program, 1996), 304.

General Chennault had concentrated his attacks in any one area or on any specific type of target then massed Japanese resistance would surely have exhausted the China Air Task Force long before the China Air Task Force could significantly impair the Japanese economy or war effort. Chennault's aerial guerrilla operations achieved tactical successes that buoyed Chinese morale and helped to ensure that China would remain at war with Japan, but did not noticeably impair the Japanese ability to wage war—a reasonable trade for a weak but growing force facing a strong opponent.³³

By late 1942, the Allies' logistical situation in the China-Burma-India Theater began to improve. Beginning in October 1942, the Tenth Air Force began to receive a steady flow of replacement aircraft and other logistical support. In July 1942, Lieutenant General Arnold, commander of the United States Army Air Force, also sent or allocated units deploying one hundred thirty-three assorted combat aircraft, including the thirty-five B-24 heavy bombers, to the Tenth Air Force, to arrive over the next six months. The United States Air Transport Command assumed command of the Himalayan air route, the infamous Hump airlift, on December 1, 1942, and quickly brought increased tonnage into China while simultaneously relieving the Tenth Air Force of one preoccupation. While China-Burma-India still occupied a very low priority position in terms of receiving Allied resources, the aerial situation in South and East Asia began to shift markedly in favor of the Allies. The improving aerial situation combined with the China Air Task Force's well-publicized and impressive successes to date encouraged a belief on the part of

³³Haulman, *High Road*, 6; Craven and Cate, *Plans*, 493–510.

Brigadier General Chennault that the tide in China had turned and that his forces should begin a sustained offensive.³⁴

On September 17, 1942, Brigadier General Chennault wrote to Lieutenant General Arnold, expressing his belief that “a very modest American air force equipped with modern airplanes” could destroy the Japanese air forces in six months or less. The idea followed Army Air Force doctrine and practice that the destruction of enemy air power served as the first objective of any air action by the United States Army Air Force. Arnold arrived at the Tenth Air Force headquarters in India on February 2, 1943, to discuss Chennault’s ideas with him, and with Brigadier General Clayton Bissell, the latest Tenth Air Force commander, and Lieutenant General Joseph Stilwell, commander of all United States Army forces in the China-Burma-India Theater. In accordance with policies set forth by the Joint and Combined Chiefs of Staff, the group decided and Arnold ordered that the newly arrived 308th Bombardment Group (Heavy) begin strategic bombing operations from China after the air lift over the Himalayan Mountains gathered one hundred twenty-four transport aircraft, probably by March 1, 1943.³⁵

³⁴After its initial influx of material, the China Air Task Force reached a low point in October 1942. At that time the Task Force deployed only roughly one thousand American personnel, five types of fighters in five squadrons, two types of two-engine bombers in only three-fourths of a squadron, and less than half a squadron of reconnaissance aircraft. Brereton, *Diaries*, 108–9; Carmichael, *Reports*; BG Clayton Bissell, letter to LTG Henry Arnold, October 13, 1942, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); Arnold, letter to Naiden, July 27, 1942; Cooper, interview; BG Claire Chennault, letter to LTG Henry Arnold, September 17, 1942, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy).

³⁵Chennault, letter to Arnold, September 17, 1942; LTG Henry Arnold, letter to Air Chief Marshal Sir Charles Portal, March 1942, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); LTG Henry Arnold, letter to MG Dwight Eisenhower, June 22, 1942, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); *Memorandum Regarding Meeting, on February 2, 1943, at 10th Air Force Headquarters, between Generals Stilwell, Bissell, and Arnold and other officers*, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); Stetson Conn, ed., *United States Army in World War II*, 89 vols. (Washington: Office of the Chief of Military History, Department of the Army, 1948–78), Philip Crowl, *The War in the Pacific, Campaign in the Marianas*, 7.

The February 1943 meeting of the American commanders of the China-Burma-India Theater brought Lieutenant General Arnold to a position of clarity regarding some of the personality conflicts that bedeviled American efforts in the theater. Despite these conflicts, early 1942 passed fairly smoothly in the theater because no American commander commanded enough resources to make any great, military difference in the war or to spark jealousy among his peers, subordinates, or rivals; difficulties aplenty arose, but largely over theoretical issues and personalities rather than actual, fierce competition for resources. After six months of infrastructure improvements, a regularization of supply channels, and with the Air Transport Command's assumption of control over the Hump airlift, tonnage began to flow across the Himalayas in quantities sufficient to allow either large-scale aerial activity or useful military training activity to occur within China proper; both could not be sustained, however, and the decision about which course to pursue pitted the local commanders against each other throughout the war. Lieutenant General Stilwell represented an orthodox, western-oriented military point of view with his desire to recreate the Chinese Army as an aggressive and capable instrument with which to engage Japanese forces within China; Stilwell hoped to drive the Chinese Army to the coast of China, capture a major port, and link-up with the Allied drive across the Pacific Ocean in order to blockade, bombard, and eventually invade Japan. Brigadier General Chennault represented a less orthodox view; he hoped to ignore the Japanese Imperial Army and to strike directly at Japanese air, naval, and industrial power using air power created by the United States and based in China. These two men found both support and opposition in Chungking, Washington, and their various

headquarters and waged a struggle that eventually reached the President of the United States but that did not end even with his decisions on the matter.

The American personalities of the China-Burma-India Theater can be roughly divided into three categories: diplomatic, air force, and military. Lieutenant General Stilwell, the major military personality, occupied several critical roles simultaneously that both gave him tremendous influence and complicated his efforts to accomplish any task; Stilwell served as Generalissimo Chiang's Chief of Staff for Allied forces in China, the commander of all American forces in the theater, and the commander of the Chinese Army in India. As his Chief of Staff, Chiang expected Stilwell to secure aid for China and, when Stilwell exercised his judgment in supporting requests only for that aid which could, in his opinion, be effectively used, and then when even those supplies often failed to arrive, Chiang began to lose trust in Stilwell. Besides Stilwell's inability to deliver Lend-Lease supplies in either quantity or quality acceptable to Chiang, the Chinese leader also took offense to Stilwell's colorful language as it concerned the performance and personalities of Chiang and his subordinates; because of the two issues, Chiang began to obstruct most of Stilwell's projects and eventually to agitate for Stilwell's removal from duty, finally succeeding in this aim in October 1944. Despite Chiang's opposition, and after some weeding out of undesirable commanders, Stilwell enjoyed relative freedom in his activities as commander of the Chinese Army in India, due in part to his ability to arrange for supplies and equipment, including tanks that could be secured in India but that could not be flown over the Himalayas, for that organization, and poured much of his labor into training and employing that force to clear a new land route through Japanese-held northern Burma and into China. Concurrent with the creation and use of the Chinese

Army in India, Stilwell commanded American service forces that gradually improved the lines of communication within India and built the Ledo Road from India to China and the famous Merrill's Marauders that helped to clear northern Burma in 1944. Finally, another key to Stilwell's power lay in his trusting relationship with Chief of Staff of the United States Army General George Marshall, who supported Stilwell in the face of growing opposition from both a diverse group of Washingtonians and businessman-adventurers known as the China lobby and growing concern on the part of President Roosevelt. Whatever his eventual success on the ground in India and Burma, however, and regardless of the confidence that Marshall placed in Stilwell, the delay of Stilwell's success until 1944 did not help to instill confidence in the American air units in the theater that Stilwell understood their problems or would employ them correctly.³⁶

Lieutenant General Stilwell's relationship with the various Tenth Air Force commanders proved successful but relations between Stilwell and Brigadier General Chennault proved unpleasant at best. Generals Brereton and Naiden served as commanders of the Tenth only briefly, with much of their activity related to enlarging the embryonic airlift over the Himalayas; they found little cause for conflict with Stilwell, who recognized the airlift as both a tiny effort and as a necessity. As the Tenth grew and after Brigadier General Bissell took command in August 1942, Stilwell maintained cooperative relations with his subordinates; Bissell, and later Generals Howard Davidson and George Stratemeyer, provided adequate aerial protection and support to both the

³⁶GEN Albert Wedemeyer, *Wedemeyer Reports* (New York: Henry Holt, 1958), 323; Romanus and Sunderland, *Mission*, passim; Kent Greenfield, ed., *United States Army in World War II*, 89 vols. (Washington: Office of the Chief of Military History, Department of the Army, 1948–78), Charles Romanus and Riley Sunderland, *The China–Burma–India Theater*, 3 vols., vol. 2: *Stilwell's Command Problems*, passim; White, *Stilwell Papers*, passim.

airlift and to both Stilwell's and British military activities in Burma; Stilwell found little cause for complaint and allowed the men relatively free rein to conduct activities as they saw fit. For his part Bissell, who commanded the Tenth until January 1944, proved more of a burden to Chennault than to Stilwell; Bissell acted the part of a responsible, technical leader by allocating to Chennault's China Air Task Force only those numbers and types of aircraft, generally small numbers of such obsolescent aircraft as the P-40 rather than more advanced gas guzzlers like the P-38, that the airlift could support. By actions of this type, Bissell incurred Chennault's and Generalissimo Chiang's disfavor, which fact led first to the creation of the Fourteenth Air Force under Chennault's command, as a coequal to Bissell, and later contributed to the removal of Bissell from command of the Tenth, though he went on to promotion and success in other assignments. Chennault, the civilian leader of the American Volunteer Group who was quickly recalled to active duty as commander of the China Air Task Force and then promoted to commander, Fourteenth Air Force, enjoyed an unusual power in his struggles against other American commanders; Chennault enjoyed a close, personal relationship with Chiang. Chiang and Chennault agreed that the best way for the Allies to defeat Japan was to employ massed air power from Chinese bases and the duo did their best to discredit and remove any commander who believed otherwise; Stilwell, Bissell, and Ambassador Clarence Gauss gave way to the machinations of this duo and were replaced by Lieutenant General Albert Wedemeyer, Chennault himself, and Ambassador General Patrick Hurley respectively, each of whom held the Kuomintang in higher regard and struggled more vigorously to gain aid for China than did his predecessor.³⁷

³⁷Brereton, *Diaries*, 108–31; Romanus and Sunderland, *Mission*, passim; Romanus and Sunderland, *Command*, passim; Kent Greenfield, ed., *United States Army in World War II*, 89 vols.

For their part, those Americans most familiar with China generally expressed the most reservations about aiding Generalissimo Chiang, while visiting dignitaries, such as Wendell Willkie, Vice President Henry Wallace, and Generals Wedemeyer and Hurley, who first experienced China as roving emissaries, tended to see only the best aspects of the Kuomintang regime and thus received and passed on requests for additional aid in a more favorable manner. While Wedemeyer and Hurley later came to understand the limitations upon American influence in China, short-term visitors never experienced the decrepit state of the regular Chinese armies and never felt frustration as Chiang secretly countermanded orders that Lieutenant General Stilwell issued to Chinese units; visitors saw only demonstration units and heard only from selected government officials; in the views of such visitors, China required only material aid in order to prosecute the war against Japan effectively. Career diplomats and military attaches, such as Lieutenant General Stilwell, Ambassador Gauss, and Foreign Service Officer John Service, knew from long experience just how bad the situation of the Kuomintang was in the countryside and on the front lines, favored conditional assistance based upon reform of government and effective military performance, and occasionally advocated overtures to groups less strongly wed to Chiang and more open to reform; these men, however, also carried little weight in the wartime governmental system in Washington. Men such as these believed, despite the fact that few listened to or respected their opinions, that sending unconditional aid to China was a waste because Chiang would wait out the war

(Washington: Office of the Chief of Military History, Department of the Army, 1948–78), Charles Romanus and Riley Sunderland, *The China–Burma–India Theater*, 3 vols., vol. 3: *Time Runs Out in CBI*, passim; White, *Stilwell Papers*, passim; Arnold, *Global Mission*, 416–30; John Service, *The Amerasia Papers: Some Problems in the History of US-China Relations* (Berkeley: University of California, 1971), 57–215.

against Japan while hoarding supplies for his post-war war against the communists. Gauss also labored under another difficulty in relating to the Kuomintang: as ambassador, he lacked any noticeable power or influence because his opinions so obviously carried little weight in Washington and because he played no role in determining the amount or type of aid that flowed to China; the Chinese learned that Gauss was unimportant and his presence became an irrelevancy because he proved unable to deal with anyone of importance in either Chungking or Washington. President Roosevelt's personal beliefs, including familial ties to the China trade and the Open Door policy, and his habit of formulating policy based on personal emissaries rather than State Department knowledge, led him to believe the optimists' reports about China and to formulate the policies of the United States such that Chiang became the sole official benefactor of American aid to China, the goal of which was to build up Kuomintang China into a major power which could supplant Japan and fend off the Soviet Union, Britain, and France in the post-war world.³⁸

The personal beliefs of American leaders, including President Roosevelt, regarding the Chinese, and Asian peoples in general, helped to form the policies of the United States in the China-Burma-India Theater. Chinese nationalism began to develop among Chinese elites as western powers began to forcibly open China to economic and political exploitation, a process that spurred the downfall of the Manchu regime and that likewise spurred the American Open Door policy. The flow of American missionaries and merchants to China, the corresponding flow of culture and material back to the

³⁸Wedemeyer, *Wedemeyer Reports*, 275–323; Romanus and Sunderland, *Mission*, passim; Romanus and Sunderland, *Command*, passim; Romanus and Sunderland, *Time Runs Out*, passim; White, *Stilwell Papers*, passim; Service, *Amerasia Papers*, 57–215; Christopher Thorne, *Allies of a Kind: The United States, Great Britain and the war against Japan* (New York: Oxford University, 1978), i–25.

United States, and the Chinese acceptance of extraterritoriality led to a general, but not universal, belief in the United States that the culture of the United States had proved itself superior to that of China and that Chinese nationalism and conversion to Christianity reflected an informal acceptance of China's position as inferior to the west. When the United States then refunded indemnities from the Boxer Rebellion and failed to carve itself a sphere of influence in China, both unlike Britain, France, Germany, Japan, and Portugal, and pressured other governments to reduce their exploitation of the Chinese, many Americans began to believe that the United States was a protector and mentor to a budding Chinese democracy. Kuomintang propaganda supported these beliefs, despite the realities that the Kuomintang actually resembled Nazi Germany more closely than the United States in its internal disorganization and that democracy played essentially no role governing China. The result, in the United States, was that while the government slowly but never fully came to recognize that the Kuomintang did not represent the Chinese people, the American public did not, during World War II, realize any such thing; furthermore, even when the government realized that the Kuomintang would never make peace with Japan regardless of what aid America sent, feelings of guilt over not aiding China sooner or to a larger degree mitigated any desire to cast aside Chiang as an ally. In effect, the government of the United States trapped itself into supporting an ally, the prestige of which it helped to build-up without justification, until American support for the Kuomintang had little to do with winning the war, less to do with winning the peace, and everything to do with avoiding embarrassment. Under such circumstances, infamous

post-war squabbles in the United States about whom “lost” China are far more comprehensible.³⁹

Without having yet realized the bottomless nature of the Chinese requirement for aid and the unwillingness of the Kuomintang to wage an aggressive war against Japan, American reinforcements flowed into India more rapidly in early 1943, causing the deactivation of the China Air Task Force and its replacement by the Fourteenth Air Force, under newly promoted Major General Chennault, on March 10, 1943. The Fourteenth Air Force took responsibility for United States’ air activity in China, leaving the Tenth Air Force to operate only in India and Burma, and continued to grow throughout 1943. In the fall of 1943, the Chinese-American Composite Wing, with one new medium bombardment and two new pursuit groups, activated in China under the command of the Fourteenth. As the Fourteenth expanded, the inadequate tonnage of the Hump airlift provided the main factor that limited the Fourteenth’s size.⁴⁰

China proved the most difficult and expensive area of the world in which to operate a force dependent on America for equipment; no theater on either side of World War II used a longer supply line. The line of communication between the United States

³⁹Akira Iriye, *The Cold War in Asia, A Historical Introduction* (Englewood Cliffs, CA: Prentice-Hall, 1974), 7–58; Thorne, *Allies of a Kind*, 1–115.

⁴⁰Considering its extremely low priority and the pressing needs of other active theaters, the China-Burma-India Theater (CBI) received a startlingly large number of replacement aircraft. CBI, however, received almost exclusively obsolescent aircraft that had not yet gone out of production. CBI’s aircraft, moreover, often served in other theaters prior to moving themselves further around the world to CBI. In addition, because air units in China lacked spare parts and often relied heavily upon ill-trained Chinese or untrained American mechanics to service aircraft, especially early in the war, aircraft sometimes lacked pieces of equipment that mechanics removed as being unsustainable “dead weight.” Further, in some cases, Chennault continued to request obsolescent aircraft specifically because the available mechanics already knew how to maintain them, unlike more modern types with which they would be unfamiliar. *Ibid.*, 521, 523, 529–530; Air Inspector, “Memorandum to Chief of Staff,” RG 18, Sk 190, R 55, C 33, Sf 4, B 301, National Archives; Cooper, interview; MG Claire Chennault, letter to GEN Henry Arnold, April 16, 1943, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy).

and China relied on scarce merchant ships crossing either the submarine infested Atlantic Ocean or the vast Pacific Ocean and then slipping past the occasional raiders and submarines that prowled the Indian Ocean. In the meantime, as the supplies traveled to India, the various British, Chinese, and American forces in the theater occasionally squabbled over allocation of the rare and precious material. Supplies destined for China or the Chinese crossed India first by using three separate gauges of rickety, low-capacity railroads, being transshipped by hand at each gauge change, and then via scarce river shipping to reach either airfields near the Himalayan Mountains or Lieutenant General Stilwell's training camps and battlefields in eastern India and Burma. Finally, after sometimes months of travel, occasional sabotage, and frequent pilfering, the supplies destined for China flew on precious aircraft, powered by imported fuel, over the tallest mountain range in the world. Once in China, a network of aircraft, trucks, river shipping, railroads, and human and animal portage distributed the material to its final destinations.⁴¹

As the Allies built more ships, American factories produced more war material, and Allied navies swept Axis forces from the seas, the oceanic leg of the journey from the United States to India became ever more crowded, faster, and easier. Such bounty led to difficulties further along in the supply route as congestion in Indian ports and railroad yards delayed traffic to the interior of India, not least because British Imperial planners

⁴¹Air Transport Command transports, together with heavy bomber's acting as transports, consumed between two and twelve gallons of fuel for each gallon that they carried from India to China. BG Clayton Bissell, letter to LTG Henry Arnold, October 13, 1942, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); 1LT William Baird, *Headquarters, Office of the Base Provost Marshall, Hijli Base Area, 30 April 1945, Historical Report for the Provost Marshall's Office*, in microfilm A7760 (Maxwell AFB, AL: Air Force Historical Research Agency); Arnold, *Global Mission*, 417–9; Craven and Cate, *Guadalcanal*, 498–9; Craven and Cate, *Matterhorn*, 90; Romanus and Sunderland, *Mission*, 57–60.

designed the Indian rail system and ports to move high volume, low weight loads of tea leaves and consumer goods rather than boxcar loads of quarter ton bombs and cases of bullets. Port capacities grew as engineers improved them continually and, after significant trouble, United States Army railroad transportation units upgraded the relevant portions of the Indian railways to a much higher standard of utility. The United States Air Transport Command and the China National Aviation Corporation likewise slowly increased the number and size of their aircraft and bases. Finally, in 1945, General Stilwell opened his long-sought overland supply route to provide yet another path along which to transport supplies to China.⁴²

In April 1943, in response to the improving logistical situation in China, and using the impressive results achieved by his forces to bolster his cause, Major General Chennault proposed a plan far more grandiose than the one upon which Generals Arnold, Stilwell, Bissell, and he agreed upon only two months before. Chennault's April 1943 plan called for nothing less than the defeat of Japan to be achieved using aerial forces based in China. Chennault planned to increase the size of the Fourteenth Air Force and to use it to attack Japanese shipping on the Yangtze River and along the China coast and then to direct the Fourteenth against the Japanese air forces when they tried to protect Japanese ships. Chennault believed that full use of the ever increasing tonnage delivered via the Hump airlift would allow the Fourteenth to operate at nearly full efficiency and, eventually, would allow further air units to bolster the Fourteenth in China and make possible the nebulous expansion of the Fourteenth's efforts that Chennault stated could win the war. In order to gain the supplies required to operate the Fourteenth at a

⁴²Ibid., 163–5, 203–7, 382–4; Romanus and Sunderland, *Command*, 11, 266–9, 471–2; Bissell, letter to Arnold, October 13, 1942; Tunner, *Hump*, 61–120.

substantially increased tempo, Chennault planned to drastically reduce the flow of supplies to other activities in China. For security, Chennault relied upon the Chinese Army to protect the Fourteenth's airbases, with support from the Fourteenth where and when necessary, in case the Japanese Imperial Army tried to stop the Fourteenth's offensive by attacking its airfields.⁴³

Lieutenant General Stilwell summed up the objections to Major General Chennault's plan; he said, in effect, that the plan could never work. Stilwell believed that the Fourteenth Air Force lacked the size to inflict serious damage upon either the Japanese merchant marine or the Japanese air forces and that the Japanese could and would use their army to capture any of Chennault's airfields that they might find it convenient to occupy. Stilwell acknowledged that the Fourteenth could sting the Japanese but discounted the ability of the Chinese Army to stop the Japanese from evicting the Fourteenth from China. Chennault believed that the Chinese armies, if given United States' air support, could hold back and even advance against the Japanese Imperial Army; Stilwell held no such delusions.⁴⁴

The term "Chinese Army," though commonly used, served as a less than accurate title by which to address the multitude of ground forces that Chennault believed could protect his airfields. The three hundred plus division equivalents of the Chinese Army

⁴³Ibid., 60–62; Chennault, letter to Arnold, September 17, 1942; *Memorandum Regarding Meeting, February 2, 1943*; BG Edgar Glenn, *Narrative of Experiences of Chief of Staff of Fourteenth Air Force, March 1943–December 1944*, in microfilm A8306 (Maxwell AFB, AL: Air Force Historical Research Agency); *Fourteenth Air Force, Air Combat Intelligence In China, 1944–45 and History of U.S. Naval Unit of 14th AF, May 44–May 45*, in microfilm A8306 (Maxwell AFB, AL: Air Force Historical Research Agency); Romanus and Sunderland, *Mission*, 284, 291, 318–31; Craven and Cate, *Guadalcanal*, 518; Bissell, letter to Arnold, October 13, 1942; MG Claire Chennault, letter to GEN Henry Arnold, May 16, 1944, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy).

⁴⁴Romanus and Sunderland, *Mission*, 322–5.

divided their loyalties between the utterly corrupt, heavily bureaucratized, and faction ridden Kuomintang and twelve war area commanders. The twelve war area commanders possessed generally low military competence and often held their jobs because they or their fathers headed their own private states (occasionally and vaguely corresponding to Chinese provinces) in the 1920s. These men individually decided to join Generalissimo Chiang's anti-warlord crusade during the late 1920s in exchange for a free hand in running their provinces. Politicians and provincial governors, they first ripped China apart after the Manchu Dynasty fell and then nominally joined with Chiang to put China back together again fifteen years later. These facts did not surprise planners in the United States, who received constant reports from skilled military and diplomatic observers that the political aspects of the chain of command, stemming both from Kuomintang and warlord loyalty, continued far below the level of the war area commanders.⁴⁵

Three armies composed a group army and themselves usually comprised three divisions each, within the organization of the Chinese Army. War area commanders or some faction of the Kuomintang chose group army commanders for their loyalty and for their prominence in provincial politics. At the army and division levels, loyalty to the group army commander and either the war area commander or a faction of the Kuomintang determined who would command. Within divisions and lower level units the system stayed the same but with loyalty owed to division commanders rather than to anyone at army or higher levels. At no level of command did a candidate's military ability prove more important than loyalty when deciding who might occupy a given post. At every level of command, a commander worked primarily to increase his own personal

⁴⁵Ibid., 32–35; U.S. Army, "Turning Point," Royer, *Dragon*, 2–5, 14–20.

power (in the form of men and equipment and the prestige and income that came from them) and to meticulously avoid any activity that might cost him that power.⁴⁶

The deployment and employment of the Chinese Army resulted directly from its system of command. A core of about thirty, well-equipped and absolutely loyal divisions enforced Generalissimo Chiang's authority and assured the loyalty of the war area commanders, but rarely fought the Japanese. War area commanders usually kept their forces inside their personal geographic areas of control without regard to the overall military situation; Chiang kept some of his forces in the rear of each war area to ensure loyalty. Unit commanders, from the war area level all the way down to division commanders, often refused to aid their neighbors in fending off Japanese attacks because loyalty extended only upwards, not laterally, and a commander gained nothing by joining a fight that did not immediately involve him. Upper level commanders might order one unit to aid another in a battle nearby but even if orders arrived on time and made military sense the recipients often ignored them or carried them out with such incompetence and procrastination as to render the orders irrelevant. Commanders often simply proved unwilling to risk their units, effectively their personal property, by moving them into danger.⁴⁷

The Chinese Air Force operated in much the same fashion as the Chinese Army. In his October 13, 1942 letter to Lieutenant General Arnold, the commander of the

⁴⁶In the Chinese Army, a soldier's pay, food, and equipment belonged to his commander. The system inevitably resulted in the inflation of reported strength, undermanned units, late or non-payment of wages, malnutrition in the ranks, the plundering of every area that a unit passed through, and a general erosion of military effectiveness. Mark Royer, *War*, 9, 14–15; Romanus and Sunderland, *Mission*, 33–36; U.S. Army, "Turning Point."

⁴⁷Romanus and Sunderland, *Mission*, 33–36; Royer, *War*, 9; U.S. Army, Office of the Chief of Military History, "Crisis in the Corridor, Chapter VIII USFCT History," RG 493, Sk 290, R 42, C 30, Sf 3–6, B 23, National Archives.

United States Army Air Force, Brigadier General Bissell of the Tenth Air Force noted that the Chinese Air Force was a, “national ambition, not a fighting organization.” The Air Force served primarily as a political tool, consuming tremendous numbers of men into ground organizations that, while large, did not always know what their duties were or how to perform them. Between lack of fuel and ammunition and the lack of desire to fight, the Chinese Air Force contributed little to the struggle against Japan except for occasionally loaning the United States Army Air Force fuel, bombs, and ground crews. Of course, the Army Air Force then trained the crews and paid back the supplies later and at a premium. The Chinese Air Force leadership also intermittently attempted to drain personnel and equipment from the United States-sponsored, equipped, and commanded Chinese-American Composite Wing into the Chinese Air Force.⁴⁸

Communism proved another factor that helped to divide the supposed unity of the Chinese Army. The Chinese communists fielded two armies during World War II and, even though unofficial communist relations with the United States proved cordial, the communists spent significant time and energy fighting pro-Kuomintang Chinese in addition to waging a successful guerrilla war against Japanese and Chinese puppet forces. The Kuomintang viewed the communists as a more serious long-term threat than the Japanese, whom the United States would certainly defeat regardless of what the Chinese did, and directed a large portion of the Chinese Army’s effort during the war toward both

⁴⁸Bissell, letter to Arnold, October 13, 1942; MG Claire Chennault, letter to COL. Fay Dice, June 21, 1945, in microfilm A8306 (Maxwell AFB, AL: Air Force Historical Research Agency); MG Claire Chennault, letter to GEN C. Chow, September 2, 1944, in microfilm A8306 (Maxwell AFB, AL: Air Force Historical Research Agency).

stockpiling supplies and cordoning off and even attacking communist forces and base areas.⁴⁹

On a more personal level, the Chinese Army proved at once more admirable and more pathetic than Chinese commanders. Chinese soldiers often acted bravely and usually endured their exceptionally poor circumstances with admirable fortitude. Unfortunately for the soldiers, even by Chinese standards of the day their circumstances were truly appalling. The weakness of the Chinese logistical system crippled the already poorly led military. China possessed little functioning industry and some of China's main food producing areas lay under enemy occupation. A wholly inadequate airlift brought China's only imports from the outside world and within China the lines of communication, disconnected rivers and utterly inadequate railroads, failed to even reach vast areas of the country.⁵⁰

The Kuomintang almost always distributed the few supplies that China saved, produced, or imported, to the most loyal of leaders. They, in turn, then stored for the supplies for eventual use in emergencies that never seemed to arrive, regardless of how bad the current situation might be. In the meantime the typical Chinese soldier lived and died while badly clothed, weak and night-blind from malnutrition, and having no choice but to plunder the farms of his fellow Chinese in a quest for food. Virtually no Chinese units possessed anything approaching their authorized equipment levels of small arms, artillery, or vehicles.⁵¹

⁴⁹U.S. Army, "Political Scene;" Royer, *War*, 6–7; Romanus and Sunderland, *Mission*, 9–10; Romanus and Sunderland, *Command*, 302–4.

⁵⁰Romanus and Sunderland, *Mission*, 33; Royer, *War*, 3, 7.

⁵¹*Ibid.*; Romanus and Sunderland, *Mission*, 33.

Lieutenant General Stilwell, a former military attaché in China, held no illusions as to the quality of Chinese forces. In the 1920s, the German General Hans von Seeckt found that, “lack of centralized authority, ill-defined powers and responsibilities, and the absence of unity of command were weaknesses prevalent in the Chinese Army.”

Lieutenant General Albert Wedemeyer found the same problems with Chinese forces inside China after assuming Stilwell’s position in October 1944. Despite the obstacles, however, Stilwell planned to transform the Chinese Army by adding training and a sufficiency of modern equipment to the already admirable bravery and endurance of the common Chinese soldier.⁵²

The Burma disaster stranded nine of China’s best divisions south of the Himalayan Mountains; Lieutenant General Stilwell planned to use them as a model for what he hoped to create, on a larger scale, in China proper. After training and outfitting, these men spearheaded Stilwell’s drive to clear a ground supply route into China from India. While that plan unfolded, Stilwell hoped to begin training sequential groups of thirty Chinese divisions each in China, using whatever equipment the airlift could fly in from India. One hundred twenty really effective Chinese divisions served as the interim goal of Stilwell’s plan to secure bases within air bombardment range of Japan and a port through which to directly import troops and supplies into China. Stilwell planned to speed up the timetable for victory over Japan by building and using a new kind of Chinese Army.⁵³

⁵²Wedemeyer, *Wedemeyer Reports*, 323; Romanus and Sunderland, *Mission*, 6, 322–4.

⁵³*Ibid.*, 6, 322–4.

No one with both sufficient stature and knowledge existed to point out the weakness in Lieutenant General Stilwell's plan. Generalissimo Chiang and the Kuomintang did not want to reform or properly train their ground forces and were going to try, whenever possible, to avoid even giving equipment to units loyal to the various warlords. An effective military posed an unacceptable threat to the dominance of the Kuomintang in China because any general who suddenly came to command even a small number of trained and decently equipped divisions could probably set himself up as ruler of much or all of free China. The Kuomintang felt secure in the knowledge that its loyal units possessed training and equipment superior to that of their provincial rivals, and that relative strength served as the limit upon how strong the Kuomintang allowed any of its army to become. The Chinese Army kept the Kuomintang in power for four and a half years against the whole of the Japanese Empire and after the United States entered the war the same army could protect China until the United States or someone else ultimately defeated Japan.⁵⁴

In search of the quickest way to accomplish the defeat of the Japanese Empire without undermining or embarrassing his government, Generalissimo Chiang chose to support Major General Chennault's plan for action in China. President Roosevelt, anxious both to help Chiang and to take the chance of defeating Japan so quickly and at such a low cost, overrode the opinions of most of his military advisers and chose to make the Chennault plan the primary focus of support from the United States. Roosevelt placed Lieutenant General Stilwell's plan second in the order of priority, essentially starving the program inside China of supplies, but allowing Stilwell to form the Chinese Army in

⁵⁴Royer, *Dragon*, 4.

India into a formidable fighting force and to lead it back into Burma. Roosevelt further directed that both Stilwell and Chennault keep the integrity and military participation of China as their first objectives. Roosevelt's decision set in motion the chain of events that led to the United States Army Air Force conducting three strategic air offensives in and from China in World War II.⁵⁵

⁵⁵Romanus and Sunderland, *Mission*, 284, 324–31; Craven and Cate, *Guadalcanal*, 518.

CHAPTER 3

THE FOURTEENTH'S FIRST OFFENSIVE

The Japanese Imperial Army preempted the Fourteenth Air Force's offensive by launching a ground offensive in China in mid-1943. While Major General Chennault amassed forces and supplies in China, Japanese ground forces began to raid deep into the Chinese heartland in order to collect railway equipment and river shipping. Japanese forces also made smaller, more permanent gains in several areas of particularly high strategic and economic value. In May 1943, even before beginning Chennault's planned offensive, the Fourteenth found itself drawn into a steadily increasing program of interdiction and air support missions. Without this aid, the hapless Chinese Army stood no chance against the Japanese Army and even with the aid could only slow the Japanese advance. In 1943, Japanese forces destroyed a number of the Fourteenth's airfields, moved about China almost at will, and otherwise fulfilled their objectives.⁵⁶

Despite the ongoing Japanese demonstration of the vulnerability of China and the Fourteenth Air Force, Major General Chennault began a small but effective anti-shipping operation on July 9, 1943, and the Fourteenth claimed 43,000 tons of shipping sunk and nearly double that damaged in the first 30 days. To conduct this offensive, Chennault employed the Fourteenth's full bomber strength; the Three Hundred Seventy-Fourth Squadron of the Three Hundred Eighth Bombardment Group (Heavy), flying four-engine, B-24 heavy bombers, and the Eleventh Squadron of the Three Hundred Forty-first

⁵⁶Craven and Cate, *Guadalcanal*, 518–45; Unknown officer, Headquarters, Fourteenth Air Force, Diary of Events: February through April 1944, RG 493, Sk 290, R 42, C 30, Sf 3–6, B 15, National Archives.

Bombardment Group (Medium), flying twin-engine B-25 medium bombers. Three other squadrons of the Three Hundred Eighth, under the command of the Tenth Air Force in India, supported the effort part-time by occasionally flying supplies from India to China, and spent the remainder of their time attacking Japanese-held factories, rail yards, and ports in Burma and Southeast Asia. The United States Navy also sent a unit to aid China and the Fourteenth; a group of intelligence specialists worked with the Fourteenth's headquarters in the tasks of photographic interpretation, communication, and intelligence; Mine Detail Fourteen worked with the Three Hundred Eighth Bombardment Group to conduct mine warfare; and Naval Group China, later called the Sino-American Cooperative Organization, worked with Generalissimo Chiang's Gestapo-like secret police, headed by the notorious gangster General Tai Li, to overhaul and energize the Kuomintang's repressive effort against political dissidents and communists within Kuomintang controlled territory.⁵⁷

Japanese shipping did not suffer, indeed could not have suffered, heavily as a result of the Fourteenth's attacks. The Japanese merchant marine used only twenty thousand tons of shipping to support the Japanese Imperial Army in China in 1943, compared to one million one hundred ten thousand tons of shipping to support the whole of the Japanese Army. Doubtless, the Japanese merchant marine used further small quantities of shipping to support Japanese naval forces in China, and certainly vast quantities of economic shipping plied the waters between Japan and Manchuria, Tientsin,

⁵⁷Glenn, *Narrative*; Maurer Maurer, ed., *Air Force Combat Units of World War II* (Washington, DC: US Government Printing Office, 1961), passim; Romanus and Sunderland, *Mission*, 337–8; “Chapter VI: Employment of Aviation,” RG 493, Sk 290, R 42, C 30, Sf 3–6, B 11, National Archives; Kreis, *Fog*, 103, 300; *Intelligence and Naval Unit*; Michael Schaller, *The U.S. Crusade in China, 1938–1945* (New York: Columbia University Press, 1979), 231–50.

and Tsingtao, but most of that never sailed into areas under the Fourteenth's attack. Finally, because the Fourteenth perpetually lacked fuel and spare parts, the Fourteenth's patrols rarely sought ships in open waters and so never found most ships bound for Japanese-held Southeast Asia, Malaya, and the Netherlands East Indies. The Japanese merchant marine did not lose anything like the quantity of shipping that the Fourteenth claimed because if they had then the Fourteenth would have run out of targets before reaching the second month of the campaign.⁵⁸

Post-war analysis and record comparison confirmed data available in 1943 and revealed the depth of the folly of those who believed the outrageous claims that the Fourteenth Air Force made in regard to its attacks against Japanese shipping. Overall in World War II, China-based aircraft exaggerated their claims of definitely sunk ships by six hundred percent, by one thousand percent if including claims of "probable." The average Japanese merchant vessel engaged in China and attacked by the Fourteenth could be taken to have been of seven hundred fifty tons displacement, though this is a generously large estimate given the coastal and river routes that the traffic took, the vast numbers of vessels of two hundred fifty tons or less in the Japanese merchant marine, and the fact that the Fourteenth achieved its best success against traffic not at sea but on the Yangtze River. The Fourteenth might have made one hundred sorties against shipping targets in July 1943, another very generous estimate given the small size of the force engaged, the supply difficulties encountered, the constant call for ground support and counter-air missions, and the fact that even a year later and with a far more ample flow of

⁵⁸“Sunderland-Perry,” RG 493, Sk 290, R 42, C 30, Sf 3–6, B 23, National Archives; “Memorandum for Riley,” RG 493, Sk 290, R 42, C 30, Sf 3–6, B 23, National Archives; COL Lacey Murrow, “Memorandum to Chief of Staff, Hq. U.S. Forces, China Theater,” RG 493, Sk 290, R 42, C 30, Sf 3–6, B 33, National Archives; Craven and Cate, *Guadalcanal*, 522–45; “Employment of Aviation.”

supplies a larger force definitely managed just over half that number of anti-shipping sorties. If we take both of these estimates as fact then the Fourteenth's claims imply that for every two aircraft that took off on anti-shipping sorties, an enemy ship sank; the claim was and is absurd on its face.⁵⁹

The Fourteenth Air Force failed to seriously degrade the Japanese merchant marine either to the degree expounded upon by Major General Chennault in his proposals or even to any strategically significant degree, for a variety of reasons. Chennault planned to receive specific and increasing quantities of fuel, ammunition, and spare parts that the Hump airlift failed to deliver despite efforts that cost the Air Transport Command one hundred fifty-five aircraft to accidents alone from June through December 1943. Air Transport Command and the Tenth and Fourteenth Air Force's transport and bomber aircraft delivered three thousand tons in July, finally reached their March 1943 goal of four thousand tons in August of that year and their seven thousand ton July goal only in October 1943. The Fourteenth's troop carrier aircraft then consumed some of those supplies while distributing the remainder to airfields across East and South China. The resulting supply shortage immediately cut the number of potential sorties per medium bomber by nearly half and per heavy bomber by close to two-thirds. Of necessity for its own survival and in order to support China, the Fourteenth then directed much of its effort against Japanese ground forces, often in support of Chinese ground forces. Tactical

⁵⁹The Fourteenth Air Force managed only forty-seven anti-shipping sorties in August 1944 and only sixty-eight in September 1944; an estimate of one hundred sorties in July 1943 rests on the high end of any scale. "Sunderland-Perry;" "Memorandum for Riley;" Glenn, *Narrative*; Joint Target Group, *The Strategic Mining of Japan*, in microfilm M1652, roll 69 (Washington, DC: National Archives); Chennault, letter to Dice, January 21, 1945; "Employment of Aviation;" MG Claire Chennault, letter to GEN Henry Arnold, September 14, 1944, in microfilm A8306 (Maxwell AFB, AL: Air Force Historical Research Agency); MG Claire Chennault, letter to GEN Henry Arnold, October 10, 1944, in microfilm A8306 (Maxwell AFB, AL: Air Force Historical Research Agency).

necessity then combined with the Fourteenth's mission of protecting China to force the Fourteenth to spend a great deal of its remaining stockpiles in attacking Japanese aerial strength both aloft and on the ground. Try as they might, the men of the Fourteenth could only spend a small fraction of their ordnance against Japanese ships, the supposed primary target of their efforts.⁶⁰

The best efforts of the Fourteenth Air Force, however exaggerated the claims or unsuccessful the results, contributed to Allied victory in World War II. The Fourteenth's attacks against Japanese ground forces killed men and destroyed equipment and facilities without which the Japanese Imperial Army lacked some of its previous strength. When the Fourteenth shot down or bombed enemy aircraft or naval vessels the results, however small compared to claims or expectations, advanced the Allied cause and sent the Axis spiraling closer to defeat. Likewise, and especially relevantly, when the Fourteenth destroyed, damaged, or delayed a Japanese merchant vessel the result contributed directly to weakening the Japanese economy and thus helped Allied forces to eventually emasculate of the Japanese ability to wage war.

That the Fourteenth Air Force contributed to Allied victory in World War II does little to mitigate the ill-advised nature of the strategic plans that committed some of the Fourteenth's resources to China in the first place. The Three Hundred Eighth Bombardment Group moved its several dozen B-24 bombers, known as the PB-4Y's to the United States Navy and the most effective American anti-submarine aircraft of the war, from the United States to Asia in 1942, a year during which Axis submarines

⁶⁰Tunner, *Hump*, 61–63; *Memorandum Regarding Meeting, February 2, 1943*; Glenn, *Narrative*; Chennault, letter to Dice, January 21, 1945; "Employment of Aviation;" Craven and Cate, *Guadalcanal*, 522–45.

destroyed well over five hundred merchant vessels off the East and South coasts of the United States and in the Bahamas and Caribbean Sea areas. The United States Navy estimated that five hundred twin- and four-engine aircraft could provide adequate aerial coverage of the waters off the East and South coasts of the United States but the United States Army and Navy together deployed only three hundred twenty-six such aircraft there in July 1942 and only four hundred seventy-three as late as February 1943. The United States military also drew the task of protecting the Caribbean Sea during the division of anti-submarine labor between the armed forces of the United States, Canada, Great Britain, and the other Atlantic area allies and devoted an even less adequate number of aircraft to that area than to the Atlantic seaboard of the United States. Beyond these areas, the United States military also exercised responsibility for, and deployed inadequate assets in, the area of Iceland and did not contribute adequate assets to operations over the Bay of Biscay, through which numerous Axis submarines passed at both the beginnings and ends of their patrols from bases in occupied France and where Army Air Force B-24 crews earned the admiration of the British Coastal Command, which requested that the two Army squadrons not be replaced by a Navy force because of the Army's effectiveness and cooperation. Finally, in November 1942, Allied forces invaded French North Africa and subsequently drew upon insufficient stocks of anti-submarine aircraft to cover the western Mediterranean Sea and the portion of the Atlantic Ocean off of Morocco as well.⁶¹

For every Allied country, possibly excepting China, the importance of the Battle of the Atlantic greatly outweighed the importance of the campaign for China; such is both common sense and common knowledge. Even for the Kuomintang, the Battle of the

⁶¹Morison, *Battle of the Atlantic*, 240–9, 410–4; Arnold, *Global Mission*, 363.

Atlantic should have been of greater immediate importance than the battle within China because the whole Allied cause depended upon victory in the Battle of the Atlantic; the results of the war, had the Axis proved victorious in the Atlantic, would have been incomparably dire for the Allies, including Kuomintang-led China. Even a delayed Allied predominance in the Atlantic would have greatly harmed the Chinese people and government by reducing the power of- and delaying- every action against the Japanese Empire or in favor of China. In the United States, every sort of production suffered each time an Allied merchant vessel sank, and each such sinking thus delayed the war against Japan and the flow of aid to China. From the point of view of military strategy, Major General Chennault ought not have had the assets in China to conduct his 1943 offensive; those aircraft should have been hunting Axis forces in the Atlantic Ocean.

Tactics provide no great argument for the Three Hundred Eighth Bombardment Group to serve in Asia instead of in the Battle of the Atlantic. Assuredly, the Three Hundred Eighth did not train to hunt submarines, but initially neither did any of the other one hundred forty-one aircraft crewed by the United States Army Air Force that patrolled the East coast of the United States in July 1942 and in increasing amounts later in the war; they learned and so would have the Three Hundred Eighth. Certainly attacking submarines is a difficult task, especially when flying a huge, four-engine aircraft; yet the Three Hundred Eighth hunted Japanese ships as their primary mission in China from July 1943 almost through the end of World War II. Hunting submarines certainly requires more patience than hunting surface ships, but the targets are both narrow, neither is overly long, and both actively maneuver in two dimensions; the tasks are more similar to each other than to attacking factories and rail yards as the Three Hundred Eighth trained

to do. Beyond this, in the continental United States the Three Hundred Eighth would have enjoyed a relative tidal wave of logistical support, superior weather forecasting, and possessed enough aviation fuel to fly more than three or four training or operational missions per month, thus learning its tasks more rapidly and conducting more, and more effective, missions than it did in China.⁶²

Within China, the Fourteenth Air Force and Major General Chennault's plan provided little concrete support to either the Kuomintang Party or the Chinese people in general. The Fourteenth certainly provided a degree of morale support and thus boosted the credibility of the Kuomintang among some segments of the Chinese population, but such benefits are difficult to quantify and, given reports from Ambassador Gauss and various Foreign Service Officers at the time and the subsequent rapid victory of the Chinese Communists in the Chinese Civil War, easy to qualify. Within the operations of the Fourteenth Air Force a clear, common sense division can be made regarding which activities supported the Kuomintang relatively more or less effectively. Certainly, when the Fourteenth intercepted Japanese aircraft over land and shot some down or scattered their bombing pattern, the Chinese living in the target areas benefited and often realized that they owed some portion of their salvation to the Kuomintang. Similarly, when the Fourteenth attacked anything Japanese within sight of the Chinese, the Chinese saw the results and came to believe more strongly in the eventual victory of the Kuomintang and its allies.

Of less benefit to Chinese morale, Fourteenth Air Force bombings of Japanese ships out of sight of land presented fewer opportunities for Chinese civilians to learn about the attacks and fewer reasons to be glad of them. Imponderable also is the morale

⁶²Ibid., 240–9.

effect upon Chinese civilians who saw American planes, especially heavy bombers that only flew a few missions per month for lack of fuel and spare parts, sitting idly in parking slots while Chinese refugees straggled past and Chinese villages burned in the distance. The very aircraft that flew least in China could have served best over the Atlantic Ocean while the aircraft that flew most in China would have served little purpose in the long distance campaign against Axis submarines. The single-, and less so the twin-engine, aircraft of the Fourteenth best served the military and morale goals that the Fourteenth Air Force sought to achieve; the Three Hundred Eighth Bombardment Group wasted its aircraft on mainland Asia.

Economically, the Fourteenth Air Force and the Hump airlift essentially did not help the Chinese people at all. Factories in the United States printed, and the Hump airlift delivered, notorious quantities of paper money to the Chinese government, helping the government to maintain short-term solvency at the expense of helping to fuel inflation that caused the real exchange rate to spiral from sixty Chinese Nationalist Yuan to the American dollar in March 1943 up to two thousand Yuan to the dollar in June 1945. Such activity, if conducted by an unfriendly government, amounts to economic warfare and in this case certainly contributed to the alienation of the Chinese people from the Kuomintang, thus working against the very goals that the United States strove to achieve in China. Further, the United States and, to a lesser extent Great Britain, delivered or handed over quantities of dollars, pounds, and gold bullion valued at over half a billion dollars to Kuomintang leaders, either to placate them, such as when Operation Buccaneer against the Andaman Islands was cancelled, or simply to make them happy; such generosity is estimated to have been ninety percent wasted due to corruption and the

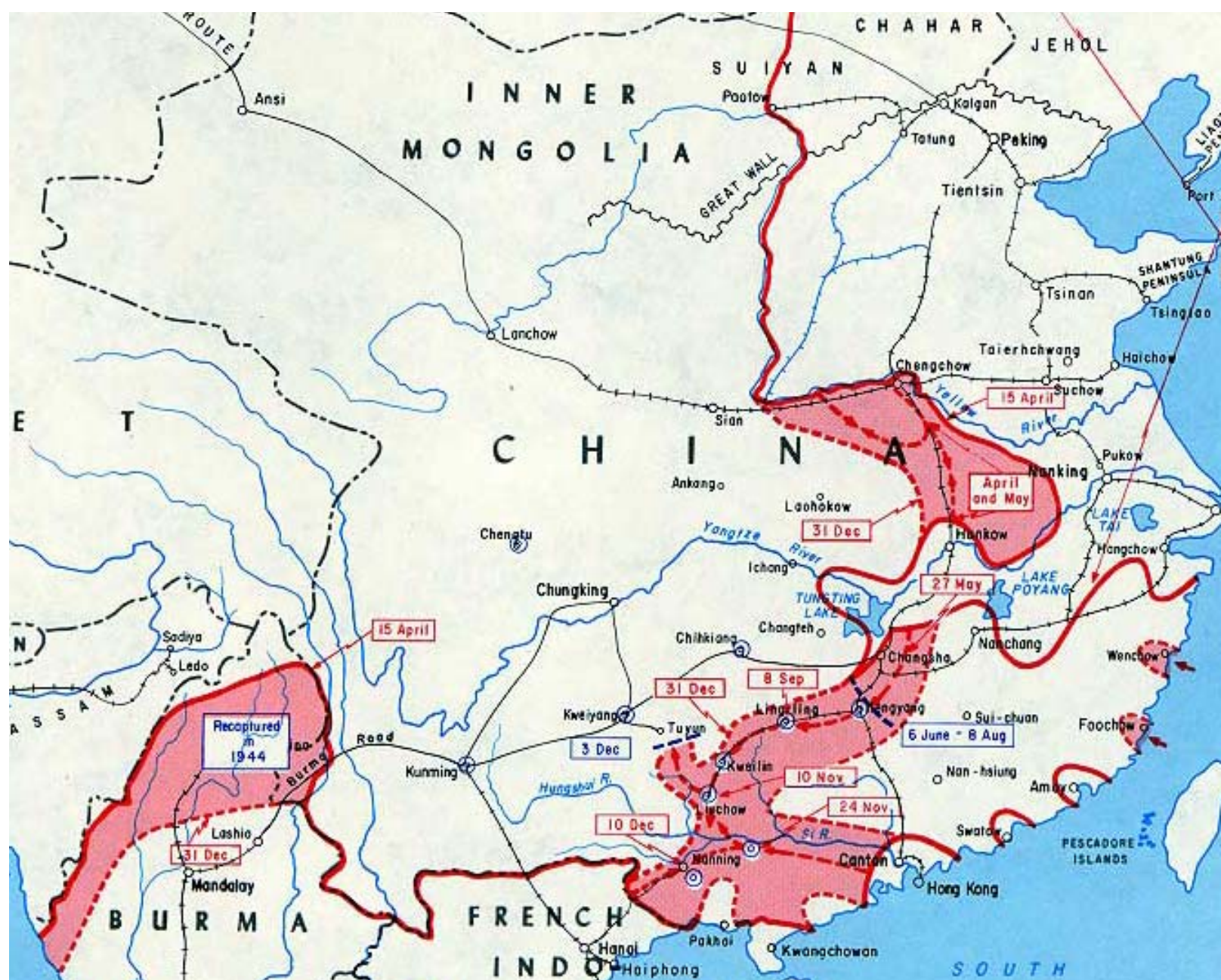
remaining ten percent of the funds simply chased an already insufficient supply of goods either within China or in Allied countries. On the plus side for the Chinese economy, on rare occasions the Hump airlift and occasional bombers smuggled consumer goods into China and carried Chinese exports such as hog bristles and raw tungsten back from China to India for use by Allied economies; such activity at least maintained some Chinese external commerce but amounted to less than a drop in the bucket of Chinese needs.⁶³

Militarily, too, Fourteenth Air Force heavy bombers, unlike their smaller brethren, contributed rather negatively than positively to the durability of the Kuomintang government. The Fourteenth's fighter and dive and medium bomber aircraft contributed to delaying, harassing, and weakening Japanese ground forces by giving air support to Chinese forces and by battlefield interdiction; these activities clearly aided the Chinese military and government. The Fourteenth's heavy bombers concentrated upon targets further back along the Japanese lines of communication and reaped a less useful whirlwind. Strikes by heavy bombers damaged enough Japanese ships, planes, and facilities to catch the attention of Japanese leaders without causing enough damage to significantly hinder any Japanese counter-stroke. The Fourteenth's anti-shipping strikes presaged without quickly becoming a serious Allied threat from airbases in East and South China to Japanese merchant shipping links between Northeast Asia and Southeast Asia and the East Indies. Partly to counter these longer range attacks, Imperial Japanese Army leaders began, in September 1943, to plan an eighteen month ground offensive

⁶³Both the Kuomintang and the Communists also allowed Chinese to legally trade between Chinese and Japanese controlled areas of China, to the benefit of all four parties, if not to the Allied war effort as a whole. 1LT C. Tarrillion, *History, HQ. & HQ. SQ., 14th Air Force*, in microfilm A8306 (Maxwell Air Force Base, AL: Air Force Historical Research Agency); Tunner, *Hump*, 43–66; Thorne, *Allies of a Kind*, passim; Romanus and Sunderland, *Time Runs Out*, 6–12.

aimed at Fourteenth Air Force airfields and certain other targets: Operation Ichigo. Major General Chennault's plan and its implementation thus sparked a massive Japanese offensive that China might have otherwise have avoided and in any case had no hope of stopping. General Arnold and the Operations Division of the War Department of the United States saw the problem too late and attempted to implement a non-provocation policy for operations from East China airbases only in late-1943.⁶⁴

⁶⁴Craven and Cate, *Guadalcanal*, 522–45; Romanus and Sunderland, *Mission*, 337–8; “Employment of Aviation,” “Sunderland-Perry,” “Memorandum for Riley,” Operations Division, General Staff, War Department, *Plan of Air Operations in China*, in microfilm M1652, roll 3 (Washington, DC: National Archives).



CHAPTER 4

ICHIGO

In her book *Stilwell and the American Experience in China*, historian and author Barbara Tuchman describes the essential strategic objectives of Ichigo.

Japan's reach had exceeded her grasp, but though the edges crumbled, she was not going to let go in China. The overall aim of ICHIGO was to consolidate Japan's position on the mainland by fusing a solid line of communications from Tientsin to Canton, and by eliminating the American airbases. Indirectly it may have represented one last effort to bring about a surrender of the Chinese Government.⁶⁵

The Japanese seemed almost to take their cue from Major General Chennault. Again according to Tuchman, "He [Chennault] began his air offensive in the fall of 1943, and the results were disastrous. As soon as the Japanese began to feel the effects of the air strikes, their armies in east China moved (as predicted)[by Lieutenant General Stilwell] on Chennault's air bases. The defending Chinese armies quickly disintegrated. All Chennault's bases in the east were captured."⁶⁶ The Ichigo offensive absorbed almost the entire Fourteenth Air Force effort in 1944, as the Fourteenth tried unsuccessfully to defend itself, and conquered vast areas of Chinese territory occupied by one hundred million people. The Chinese military lost five hundred thousand men to Ichigo, and only two of fifteen major, American, combat airfield complexes survived the offensive.⁶⁷

⁶⁵Barbara Tuchman, *Stilwell and the American Experience in China, 1911–45* (New York: Macmillan Company, 1970), 457.

⁶⁶*Ibid.*, 508.

⁶⁷Fourteenth Air Force, Diary, February through April 1944; Chennault, letter to Arnold, May 16, 1944; Chennault, letter to Arnold, September 14, 1944; Chennault, letter to Arnold, October 10, 1944; MG Claire Chennault, letter to GEN Henry Arnold, November 11, 1944, in microfilm A8306 (Maxwell, AFB, AL: Air Force Historical Research Agency); MG Claire Chennault, Letter to GEN Henry Arnold,

Distracted by events elsewhere and stung by their failure to seize the city of Changsha in late-1941, the Japanese Imperial Army stopped conducting strategic offensives in China for two years after 1941. In mid-1941, the Japanese Army began to remove its best formations from China and to replace them with inexperienced and less heavily equipped units and to send to China fewer supplies and munitions, relying instead upon Chinese production to support the Japanese Army in China. The new forces then operated on a small scale against the Chinese in order to gain experience and keep the Chinese off balance while the newly released troops moved southward into French Indo-China and Thailand, and later into Southeast Asia and the various islands of the Pacific Ocean. After the European Axis powers invaded the Soviet Union in June 1941, and after Japan decided not to invade the Soviet Union from behind, the Japanese Army also began to replace its forces in Korea and Manchuria with new formations and to send the veterans to the more active theaters of war.⁶⁸

In 1942 and 1943, the Japanese Imperial Army's small-scale operations did not translate into being completely idle in China. In both years, the Japanese Army advanced incrementally, seizing choice bits of terrain and conducting raids to seize or destroy Chinese forces, facilities, and equipment. The Japanese Army strengthened its forces by giving many new soldiers and airmen valuable battle experience at relatively light cost against relatively non-lethal opponents while, for two years, also undoing much of the

December 17, 1944, in microfilm A8306 (Maxwell, AFB, AL: Air Force Historical Research Agency); Craven and Cate, *Guadalcanal*, 538.

⁶⁸Romanus and Sunderland, *Mission*, 310–58; “Sunderland-Perry;” “Memorandum for Riley;” “History of the Army Section, Imp. GHQ, 1941–45: II. Operational Concept of the Imp. GHQ,” RG 493, Sk 290, R 42, C 30, Sf 3–6, B 25, National Archives; “History of the Army Section, Imp. GHQ, 1941–45: III. Directions for the Period Between February and May 1945,” RG 493, Sk 290, R 42, C 30, Sf 3–6, B 25, National Archives.

rebuilding that China's armed forces attempted and preventing Chinese and American forces from too strongly fortifying and upgrading Chinese-held railroads, airbases, river networks, and defensive positions. The Japanese Army kept the Kuomintang, Chinese Army, and Chinese economy weak and fractious, preventing China from becoming a strategic threat to Japan, while simultaneously building itself up and allowing the Empire to exploit China's resources in support of the Japanese war effort in theaters other than China.

As Major General Chennault's anti-shipping campaign began in China in July 1943, the Japanese Imperial Army began to look upon the future of the Japanese Empire on mainland Asia with a critical eye. Allied forces advancing across the Central and South Pacific did not yet directly threaten the Japanese occupation forces in China or the shipping lanes between Japan and the East Indies, but American submarines made growing inroads into the Japanese merchant marine's strength and the Fourteenth Air Force posed a potential threat to Japanese shipping lanes between Taiwan and points south and southwest of there. In November 1943, too, the Fourteenth began to attack Taiwan and the Imperial Headquarters began to feel a degree of urgency to initiate countermeasures, lest the new B-29 bombers begin bombing Japan proper from airbases in southeastern China. The Japanese Army could take little initiative against American submarines or the advance of Allied forces across the Pacific, but Japanese ground forces in China could both deal with the Fourteenth Air Force directly and help to insure their own survival against the advancing Allied surface and submarine forces. Japanese Army raids against the Chinese in 1943 demonstrated the inability of even combined Chinese ground forces and American aerial forces to stop determined Japanese ground advances

and telegraphed the best method by which the Japanese Empire could stop the Fourteenth's depredations and insure itself against any resurgent Chinese threat.⁶⁹

Imperial Headquarters created the Ichigo plan as a booster for Japanese and a depressant for Allied morale after the long string of reverses suffered by Japanese forces in the Central and South Pacific areas but, after realizing the danger of American air forces based in China, began to diversify Ichigo's objectives. The American airbases in southern China served as primary objectives of the Ichigo plan from the beginning, but assumed greater importance as American aerial forces began to attack targets on Taiwan and continued to develop the B-29. Imperial Headquarters added the capture and rehabilitation of a continental corridor between Wuhan and Indochina as an objective after the Allied advance across the Pacific Ocean began to accelerate. The Japanese Imperial Army required the use of its massive stockpiles of supplies in North China in order to conduct Ichigo and thus added the conquest and rehabilitation of the rail line between Wuhan and the Yellow River as an objective; the Allied advance across the Pacific coupled with submarine depredations to make this portion of Ichigo even more important. Militarily, the Chinese Army posed a potential, if not imminent, threat to Japanese control of East and South China; the dozens of divisions of the Chinese Army deployed between Wuhan, Canton, and Luichow served as another objective of Ichigo.⁷⁰

Within China, the ill-equipped and ill-led Chinese Army posed a potential, rather than an existent, strategic threat to Japanese interests. In late-1943, the bulk of the combat forces of the Chinese Army occupied three major deployment areas: along the Yangtze

⁶⁹LTC Katayama Hirohito, "The Logistic Activities of the Japanese Imperial Army in the Ichigo Operation," unpublished paper for Ground Self Defense Forces Staff College, Yokosuka, Japan.

⁷⁰Ibid.

River between occupied Wuhan and the temporary capitol city of Chungking, behind the Yellow River in the vicinity of Chengchow where the Chinese blew open the Yellow River dykes earlier in the war, and in and south of the city of Changsha between Wuhan and Canton. The Ichigo plan called for Japanese forces attacking from both North and South and outwards from Wuhan planned to disperse the northern grouping at the Yellow River bend and crush the southern grouping before driving its remnants westwards into Kweichow and Kwangsi provinces. Ichigo aimed to remove the possible threat posed by the Chinese Army from Japanese strategic planning.⁷¹

The Chinese Army only rarely conducted strategic offensives during World War II. The only examples of Chinese Army offensives after 1941 took place in Burma and across the Salween River toward Burma, both far from the scene of Ichigo and under Lieutenant General Stilwell's driving influence. Japanese planners, however, needed to consider the possibility that the large but inept Chinese Army would finally begin to attack, using all of its carefully stored munitions and possibly under American command, as soon as the United States or Soviet Union simultaneously conducted their own offensives into Japanese occupied China. That scenario served as a nightmare possibility that the Japanese Imperial Army considered unacceptable and planned to make impossible through Ichigo.⁷²

The Fourteenth Air Force's bases served as the other constant in Ichigo planning. Chennault's anti-shipping campaign served notice to Imperial Headquarters that shipping

⁷¹Colonel T. Taylor, "Memorandum to General Albert Wedemeyer," RG 493, Sk 290, R 42, C 30, Sf 3-6, B 11, National Archives; Hirohito, "Ichigo;" "The Battle for the Eastern Airfields," RG 493, Sk 290, R 42, C 30, Sf 3-6, B 11, National Archives; U.S. Army, "Turning Point," Fourteenth Air Force, Diary, February through April 1944.

⁷²Romanus and Sunderland, *Mission*, passim; Romanus and Sunderland, *Command*, passim; Hirohito, "Ichigo."

lanes between Japan and Southeast Asia and the East Indies might become obstructed. Fourteenth Air Force attacks against Taiwan, a relatively longtime Japanese possession called strict attention to the need to protect Japan from aerial bombardment. The execution of Ichigo promised to greatly ameliorate both of these threats by weakening the Fourteenth through destruction of facilities, equipment, and morale, by distracting its efforts away from strategic targets and onto the Ichigo ground forces, and by driving the Fourteenth westwards to bases further from such vital target areas as Shanghai, Taiwan, and Japan proper. The southern arm of Ichigo struck first at major combat airfields along the Wuhan to Canton rail line and then split its attacks, smaller forces moving eastwards to destroy the Fourteenth's forward bases and the main Ichigo attack proceeding westwards toward the Fourteenth's hubs at Kweilin and Luichow.⁷³

As Allied forces moved further across the Pacific Ocean, Imperial Headquarters increasingly saw the need for a continental corridor between Manchuria and Indochina. The Japanese held the metropolis of Wuhan on the Yangtze River, at the midpoint along the Canton-Tientsin rail line and during Ichigo, Japanese forces marched out of that city towards both the north and the south while other forces thrust along the rail line from the north and south ends. Ichigo placed Chinese forces defending the railroad and United States' airbases along the line and in east China between two fires. After a major effort to repair and enlarge the line, Japanese forces could use it and its attendant laterals to help to maintain forces throughout eastern China, Indochina, and Burma with little regard to the merchant marine. Japanese companies could use the line to exploit the resources of eastern and southeastern China and to transport some critical raw materials back toward

⁷³Ibid., U.S. Army, "Turning Point;" "Eastern Airfields;" Fourteenth Air Force, Diary, February through April 1944.

Japan, thus partially circumventing the blockade that the Allies obviously planned to impose. Finally, Japanese forces could use the line to quickly, safely, and economically shift forces between each of the current or prospective fronts on mainland Asia.⁷⁴

Given the military situation in China in 1943 and 1944, it is perhaps surprising that Imperial Headquarters did not simply order the occupation of China as far southwestward as Burma. The Japanese Imperial Army might have been able to conduct such a mission, albeit with extreme logistical difficulty; several American military authorities of the time stated flatly that the Japanese could conquer any or all of China should they so desire. Certainly, if Japan had conquered the Chinese capitol at Chungking, the American bomber bases under construction around the major city of Chengtu, and the Hump airlift terminus at Kunming, then Chinese government and military power would at least have weakened and might have collapsed. Geographic and political realities, however, caused Imperial Headquarters a certain reticence toward ordering the conquest of the remainder of free and organized China.⁷⁵

The Chinese hinterland presented a geographic dead end to any Japanese invader. Japanese forces that might advance into the vicinity of Chungking, let alone to even further distant Chengtu or Kunming, could not react quickly either to Allied or Soviet threats to northern, southeastern, or eastern China or to orders for their withdrawal from China. No railroads lead westward from either Wuhan or very far from Canton. For much of each year, the characteristics of the Yangtze River to the west of Wuhan make it suitable for navigation only by the smallest of river vessels and the Fourteenth Air Force

⁷⁴Taylor, "Memorandum to Wedemeyer;" Declassified Manuscript, RG 493, Sk 290, R 42, C 30, Sf 3–6, B 33, National Archives.

⁷⁵Taylor, "Memorandum to Wedemeyer;" U.S. Army, "Turning Point;" Hirohito, "Ichigo."

proved to the Japanese in 1943 that even so mighty a river as the Yangtze could be virtually blocked by air power and mining. Yunnan province, in fact, is closer to both French Indochina and Burma than it is to Wuhan. Naturally, Chinese forces located so far from Japanese-occupied territory posed little threat to the Japanese Empire, except possibly by attacking into Burma from “behind” the India-Burma frontier, and could not easily or quickly reach the front lines in central China.⁷⁶

Political considerations also helped to dissuade Imperial Headquarters from sending the Japanese Imperial Army along the road to Chungking. The Kuomintang behaved, through over seven years of war, as a relatively benign opponent to Japanese expansion; waging a civil war in preference to fighting Japanese and expending minimal resources against Japanese forces while subverting internal opponents and waiting for outside allies to conquer Japan on other battlefields. If Japanese military forces toppled the Kuomintang directly, then something might arise to take the Kuomintang’s place as the governing body of free China. In Japan’s worst case, a communist regime might assume power over both the remains of free China and the nominally Japanese-occupied portions of China over which communist guerrillas and councils already held sway. Perhaps less disastrous for Japan, though only by degrees, a revitalized nationalist government might arise after Generalissimo Chiang and the previous elite fell either from power or into Japanese captivity; such a government would most likely have had strong American backing and been more open than Chiang had been to prosecute aggressive war against the Japanese. These possible results presented Imperial Headquarters with the

⁷⁶Ibid.; Research and Analysis Branch, Office of Strategic Services, *Occupied China Railroads North of the Yangtze River*, in microfilm M1655, roll 16 (Washington, DC: National Archives); COL Edward Bailey, “Memorandum to G-5 Section, This Headquarters,” RG 493, Sk 290, R 42, C 30, Sf 3–6, B 33, National Archives; Murrow, “Memorandum to Chief of Staff.”

choice of whether to undertake a truly massive offensive in order to gain possibly unfavorable results or to undertake a lesser effort in order to gain almost certainly favorable results. Imperial Headquarters made the obvious choice; a large and successful Japanese offensive in southern and eastern China to remove much of the Kuomintang's remaining political support, by demonstrating again the impotence of the Kuomintang, and military capability.⁷⁷

An odd self-interest governed both Japanese and the Kuomintang actions in 1943 and 1944. Imperial General Headquarters did not want the Kuomintang to collapse because the Kuomintang both did not fully control all of free China and did not want to expend its strength fighting the Japanese rather than the Communists. The Kuomintang, meanwhile, did not trust many of the Chinese officials in southeastern China and would not support the armed forces under their control against Japanese forces. In 1943, Marshal Li Chi-shen formed a coalition of southern Chinese political and military leaders who, possibly with communist support, either planned to contest the dominance of Chiang's faction of the Kuomintang over China or planned to maintain facile Kuomintang governance over their territories if a Japanese offensive should sever them from the actual Kuomintang control. Generalissimo Chiang saw the coalition forming and tried to destroy it through political machination but only prompted a shakeup of the Kuomintang that left the southern coalition stronger than before. Unable or unwilling to destroy the coalition, Chiang denied the dissident faction supplies and successfully lobbied the United States government to withhold both aid and recognition from them as well. Despite this prohibition, however, Lieutenant General Albert Wedemeyer, the

⁷⁷U.S. Army, "Political Scene;" U.S. Army, "Turning Point;" Wedemeyer, *Wedemeyer Reports*, 313–6.

American commander of the China Theater after Chiang's machinations finally succeeded in having President Roosevelt recall General Stilwell, records in *Wedemeyer Reports* that Major General Chennault disregarded orders not to aid the dissident Chinese in Hunan Province, the very forces that protected so many of Chennault's airbases, and Chennault's personal correspondence lends credence to the claim, despite Chennault's strong ties to Chiang's regime. In any event, Chinese politics weakened the joint American-Chinese war effort and Japanese diplomatic seeds, reportedly sown in meetings with both Chiang's representatives and with Li's clique, fell upon the fertile mud of Chinese politics and apparently bore a useful fruit.⁷⁸

Chinese and American forces attempted, often halfheartedly and rarely with notable success, to stem the Japanese tide. Forces loyal to Generalissimo Chiang resisted and delayed the Japanese advance that connected Japanese positions north of the Yellow River to Wuhan but made no determined effort to aid Chinese forces south of Wuhan. Chinese forces under Marshal Li and General Hsueh Yueh in Hunan and Kwangsi Provinces received no support from Chiang and only a few supplies from the United States; China's southeastern armies quickly routed in the face of the Japanese advance. Hsueh's forces in Hunan Province, the Chinese Ninth War Zone, disintegrated rapidly enough to cause American forces as far away as Chengtu to make hurried evacuation plans. Officials of the perpetually ill-equipped and unsupplied Chinese Army even

⁷⁸U.S. Army, "Political Scene," Wedemeyer, *Wedemeyer Reports*, 275, 313–6; MG Claire Chennault, Letter to GEN Hsueh Yueh, August 25, 1944, in microfilm A8306 (Maxwell, AFB, AL: Air Force Historical Research Agency); MG Claire Chennault, letter to GEN Lie Shien Nieu, July 19, 1944, in microfilm A8306 (Maxwell AFB, AL: Air Force Historical Research Agency); GEN Hsueh Yueh, letter to MG Claire Chennault, August 17, 1944, in microfilm A8306 (Maxwell AFB, AL: Air Force Historical Research Agency); Romanus and Sunderland, *Command*, 402–12.

hurriedly abandoned a supply dump containing an estimated one hundred thousand tons of military supplies without taking time to destroy or distribute the material.⁷⁹

Japanese Imperial Army forces achieved their Ichigo objectives in a vast campaign, beginning preliminary operations in late-1943 and not stopping Ichigo's last lunges until mid-1945. Japanese forces mauled the Chinese Army and assumed stewardship over economic resources from a vast portion of China while simultaneously denying the potential of those resources to the Allies. Japanese forces did not overthrow the Kuomintang, in fact destroying a potential rival to the Kuomintang whose power bases lay in the path of Ichigo, but materially weakened the Chinese government through loss of territory, supplies, and military forces and by once again publicly demonstrating the Kuomintang's incompetence to both the Chinese people and the entire world. Ichigo secured for the Japanese Empire a continuous railroad connection between Manchuria and Indo-China, with all the benefits to be gained from that line, while denying to China and the Allies the resources of a vast population and geographic area. Japanese advances captured dozens of American airbases in eastern, southern, and central China and pushed the Fourteenth Air Force westwards to bases hundreds of miles deeper inside China and further from their intended targets.

⁷⁹U.S. Army, "Turning Point;" U.S. Army, "Crisis in the Corridor;" War Department, "Plan for Air Operations in China;" "Eastern Airfields;" "CT History, Oct 20-Dec 3 '44," RG 493, Sk 290, R 42, C 30, Sf 3-6, B 11, National Archives; Declassified Manuscript; Commanding Officer, Forward Echelon Detachment, XX Bomber Command, "Evacuation Plan," RG 18, Sk 190, R 60, C 30, Sf 7, B 149, National Archives; U.S. Army, "Political Scene;" Chennault, letter to Arnold, September 14, 1944; Chennault, letter to Arnold, October 10, 1944.

CHAPTER 5

PLANNING FOR MATTERHORN: ALLIED STRATEGY AGAINST JAPAN

Even before the United States entered World War II as a formal combatant, President Roosevelt and Prime Minister of Great Britain Winston Churchill agreed upon a strategy that concentrated American and British power upon the defeat of the European Axis powers before beginning to concentrate in the Pacific area against the Japanese Empire. With the Chinese Air Force impotent in the face of, and the impotent Chinese Navy destroyed by, Japanese air power, and after France surrendered to Germany in 1940 and subsequently admitted Japanese forces to Indochina, the western shore along the Japanese sea route to the East Indies became secure. When Japanese forces devastated the battleship squadrons of the United States Pacific Fleet at Pearl Harbor on December 7, 1941, they also eliminated any hope that the United States Navy could stride across the Pacific Ocean, save the Philippine Islands, and cut Japan off from the natural resources of Malaya and the Netherlands East Indies in one swift campaign. In the Philippines and Malays, Japanese attacks and landings in December 1941 progressed well enough to make the Japanese conquest, if aggressively sought, simply a matter of time. Allied, a term that in the Pacific Theater after mid-1942 came increasingly to mean American, strategy in the war against the Japanese Empire stemmed from events that occurred not later than December 1941.⁸⁰

⁸⁰Morison, *Rising Sun*, 45, 51, 61–62, 164–83; Crowl, *Marianas*, 2–3.

American naval planners spent much of the two decades of peace between World War I and World War II drawing the Rainbow plans, one of which formed the basic outline of the strategy that the armed forces of the United States followed against the Japanese Empire in World War II. The United States Pacific Fleet planned to strike westward from Hawaii toward the Philippine Islands and hoped to find the American-occupied Philippines still in friendly hands and able to support the fleet once it arrived. The United States Navy planned to seize island stepping stones in the Caroline and Marshall Islands, mandated to Japan from Germany by the League of Nations after World War I, in order to aid the advance and guard the lines of communication, and considered invading some of the islands south of Japan in order to tighten a blockade of Japan and to serve as bases for air attacks against targets in and around the Japanese home islands. The Navy, together with the Army Air Corps then planned to blockade and bombard Japan into submission by destroying the Japanese economy's ability to support the war, hopefully without conducting an invasion of Japan proper.⁸¹

Immediately after Japanese forces began attacking forces and facilities belonging to Australia, the United States, the Netherlands, and the British Empire, Allied submarines began the first direct attacks upon the economy of the Japanese Empire. Throughout the war, many Allied submarine operations concentrated upon such tactical tasks as supporting guerrilla organizations, rescuing downed airmen, moving vital supplies, and scouting for and guarding against Japanese military forces, but Allied submarines contributed to victory over the Japanese Empire primarily by attacking Japanese merchant vessels. Early in the war, with Japanese forces advancing and Allied

⁸¹Crowl, *Marianas*, 2–3.

forces in dire need of support, Allied submarines attacked the Japanese economy by concentrating upon tasks such as attacking convoys bound to and from front line islands and battles. After mid-1942, after the Japanese offensive stalled and Allied forces began to conduct offensives of their own, Allied submarines helped to weaken both the Japanese military and economy by creeping inside the Japanese defense perimeter and attacking convoys both of supplies and troops and of raw materials. Eventually, Allied submarines even penetrated into the Yellow Sea and Sea of Japan and ravaged the previously untouchable commerce that flowed between Japan and Korea, North China, and Manchuria. Naturally, Japanese shipping sought protection from the depredations of Allied submarines; lurking in ports at night and using routes through the shallowest possible waters helped merchant ships to protect themselves against submarines but made them rather less efficient and more vulnerable to aerial attack. Both directly and indirectly, submarines contributed immensely to the destruction of the Japanese economy.⁸²

Allied ground forces did not find the Japanese economy to be as accessible a target as did Allied submarines. Allied ground forces contributed to attacking the Japanese economy almost exclusively at third hand, by attracting and destroying the fruits of the Japanese economy and, more importantly, by providing ever advancing bases for Allied air and naval forces. Chinese and other Allied ground forces, especially including irregular forces behind Japanese lines, also contributed to weakening the Japanese economy, or at least to preventing it from expanding as swiftly as it might have,

⁸²Morison, *Rising Sun*, 176–380; Samuel Morison, *United States Navy in World War II*, 15 vols. (Boston: Little, Brown, 1948–93), *Vol. IV, Coral Sea, Midway and Submarine Actions, May 1942–August 1942*, 187–244; Samuel Morison, *United States Navy in World War II*, 15 vols. (Boston: Little, Brown, 1948–93), *Vol. 14 Victory in the Pacific, 1945*, 285–97.

by destroying accessible materials and installations of economic value either before Japanese forces seized the installations or by sabotaging them after the battle lines rolled past.

Allied ground based, tactical air forces found the Japanese economy a difficult target to attack both consistently and directly. Tactical air units contributed most effectively to the war against the Japanese economy by placing attacks against Japanese ships at the top of their list of priorities, except in the direst tactical emergencies. Japanese ground forces could not easily retreat from island battlefields, but Japanese ships could more easily do so. Allied commanders thus ordered tactical air units to concentrate upon destroying the shipping that connected Japanese bases to the Japanese economy before actually attacking the bases themselves. These attacks, while occasionally effective within their limits, only damaged those portions of the Japanese economy that came within reach; tactical air forces operating against economic targets of opportunity could do little to crush the most vital portions of the Japanese economy simply because most of, and the most vital portions of, the Japanese economy lay deep inside Japanese controlled territory.⁸³

Allied, naval, surface forces found the Japanese economy to be an occasionally accessible target and struck it accordingly. Naval aircraft attacked Japanese merchant vessels and economic facilities whenever encountering such, especially when naval forces ventured inside the Japanese strategic perimeter to strike at ships and facilities in previously secure areas. On rare occasions, surface ships contributed directly to the Allied attack against the Japanese economy, first while fighting defensive battles such as

⁸³Craven and Cate, *Guadalcanal*, xv.

Balikpapan in the East Indies and later while conducting anti-shipping sweeps and bombarding Japanese economic facilities. Allied naval air and naval surface forces contributed indirectly to destroying the Japanese economy by destroying Japanese material, especially including ships suitable for anti-submarine warfare, and by helping ground forces to seize bases closer to the heart of the Japanese economy.⁸⁴

Allied strategic bombers frequently and directly attacked the Japanese economy. The Fourteenth Air Force began a formal anti-shipping campaign in July 1943, largely using B-24 heavy bombers, and heavy bombers in other air forces facing Japan moved Japanese shipping to the top of their target lists even earlier. Heavy bomber units bombarded islands and anchorages in the Central Pacific, more discrete ports, mines, and factories in the East Indies, and ports, rail yards, and warehouses on mainland Asia and Taiwan. Heavy bombers also flew reconnaissance missions looking for ships that they themselves and other air and naval forces then attacked. Heavy bombers made especially effective attacks against the Japanese economy by laying mines in ports, rivers, and straits, not only sinking or damaging ships but forcing others to delay or redirect their voyages and thus to cascade inefficiencies throughout their client industries. Outdated and obsolescent B-24 and B-17 heavy bombers accomplished that much during the years when the Japanese defense perimeter extended thousands of miles from Japan proper, when the new B-29s came into active service, planners should have expected even more.⁸⁵

⁸⁴Morison, *Rising Sun*, 285–369; Morison, *Victory*, 309–16.

⁸⁵Craven and Cate, *Plans*, passim; Craven and Cate, *Guadalcanal*, passim; Craven and Cate, *Matterhorn*, passim; Rokuemon Minami, *Narrative of Interrogation*, in microfilm M1654, roll 2 (Washington, DC: National Archives); T. Moorer, *Interrogation No. (USSBS 226) NAV No. 54*, in microfilm M1654, roll 2 (Washington, DC: National Archives); Hulin, Letter to Chief of the American Mission—Haiphong, RG 493, Sk 290, R 42, C 30, Sf 3–6, B 12, National Archives.

In deciding how to employ the B-29s when they came into service, planners considered a wide range of targets and bases. B-17s, B-24s, and the Royal Air Force's Bomber Command provided a substantial and growing strategic bombing capability that struck into the heart of Germany on an almost daily basis and that seemed adequate to the task of bombing Germany. Japan, on the other hand, lay beyond the reach of these types of aircraft but potentially not of the Very Long Range project's B-29s. Commanders in the Pacific cried out for the B-29s while those in Europe remained far less vocal. Consequently, President Roosevelt, General Arnold, and other planners first decided to send the B-29s to fight against the Japanese Empire.⁸⁶

Well before B-29s neared active service, the Committee of Operations Analysts, a staff group that provided information and analysis to Allied planners, took the next step in deciding what the B-29s would attack when finally they did see combat. The Committee selected six types of targets, the destruction of which would essentially end Japanese war production: shipping, coke ovens for the steel industry, general urban industry, anti-friction bearings, the electronics industry, and aircraft manufacturing. The Committee further pointed out that the Japanese oil industry provided the fuel for the Japanese war machine and merchant marine and thus also served as a vitally important target. The Allied militaries directed all of their truly strategic attacks, whether by land, air, submarine, or surface ship, against one of these seven target areas.⁸⁷

Most Allied forces could not operate directly against the Japanese oil industry because most of Japan's wells and refineries lay in either Japan, Manchuria, or the East

⁸⁶Arnold, *Global Mission*, 476–7; Hall, *Case Studies*, 272–3.

⁸⁷Craven and Cate, *Matterhorn*, 27–28.

Indies, beyond the reach of Allied weapons. B-24 bombers based in Australia occasionally bombed Japanese-held oil refineries at Surabaya and Balikpapan, but only carried a miniscule three thousand pounds of bombs to such distant targets, making decisive success impossible to achieve. Until B-29 bombers entered service the Allies could only attack the Japanese oil industry tactically, while the oil sailed in merchant vessels, and with pinprick strategic strikes against the few installations within reach of Allied weapons. B-29 bombers could operate against the Japanese Empire's natural oil supply in the East Indies more easily, from bases in Ceylon with slightly more bombs than B-24s could from Australia or from Australia with massive loads of between five and ten tons of bombs, and against the Japanese Empire's small but growing oil shale and synthetic oil industries in Manchuria, from bases in China. One factor militated against attacking the Japanese Empire's oil supply; when B-29 bombers finally entered combat, Allied submarine and aerial interdiction might already be severing the chain of ships that connected the Japanese oil industry to the Japanese home islands. In any case, the Allies expected results from operations at such great distances to be gradual and long in coming; the Japanese oil industry did not seem likely to be a decisive target until late in the war, if ever.⁸⁸

The Allies could not decisively, or even heavily, attack the Japanese Empire's aircraft, anti-friction bearing, electronic, and urban industries early in World War II. The critical facilities within these industries lay predominantly in Japan proper, beyond the reach of the Allies before the United States Marine Corps and Army captured the

⁸⁸LTG George Kenney, letter to GEN Henry Arnold, October 29, 1943, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); Joint Target Group, *Manchuria*; E. Schumpeter, ed., *The Industrialization of Japan and Manchukuo, 1930–1940* (New York: Macmillan, 1940), 239, 411–8; Craven and Cate, *Matterhorn*, 5, 12, 28.

Mariana Islands. B-29 bombers based in China might attack the aircraft, electronic, and bearing facilities in Manchuria, Taiwan, Korea, and Japan. B-24 bombers flying from free Chinese territory could attack targets on Taiwan and many aircraft could attack the urban industries in such cities as Bangkok, Hanoi, and Shanghai from bases in China, Burma, and India. The very diversity and abundance of these targets limited the Allies, who could destroy numerous textile mills or cement plants, for instance, without significantly impairing the Japanese ability to wage war. Even if the Allies inflicted vast destruction upon every urban area within reach, the bombs would slaughter predominantly friendly civilians while reducing the Japanese supply of numerous items of little, individual importance. After the Allies captured the Mariana Islands, B-29 bombers could attack factories and cities all across Honshu and Kyushu, but until then the centers of gravity of the Japanese aircraft, electronics, anti-friction bearing, and urban industries lay beyond Allied reach.⁸⁹

For two reasons, the Japanese steel industry presented a uniquely vulnerable target when compared to Japan's other industries. Coke ovens served as the best tactical points at which to attack the Japanese steel industry because they consisted of precise masonry and required up to a year to rebuild after being damaged by nearby explosions. Other areas of steel mills, by contrast, resist the effects of bombing because steel mills are built to work with heavy weights of high temperature materials. Further, limited Japanese coke capacity and supply formed one of the two main constraints upon Japanese

⁸⁹Japanese urban industry did not simply consist of full-scale factories located in residential neighborhoods; many individual Japanese produced even material and energy intensive goods, including cast metal goods, in their own back yards. Ibid., 5, 27; Joint Target Group, *Manchuria*; Joint Target Group, *Air Target Index-Japanese War, Numerical Target Index, Objective Area 91:6-Takao (Jap. Pac. Is.)*, in microfilm M1653, roll 2 (Washington, DC: National Archives); Joint Target Group, *Air Target Index-Japanese War, Numerical Target Index, Objective Area 84:3-Heijo (Korea)*, in microfilm M1653, roll 1 (Washington, DC: National Archives); Schumpeter, *Industrialization*, 614–6.

steel production; any change in the amount of coke produced by the Japanese steel industry would translate immediately into a corresponding change in the amount of steel produced by that industry. More than half of Japanese coke capacity—the backbone of the Japanese steel industry—lay within range of B-29 bombers based in Central China. B-29 bombers could thus attack over half of the most vulnerable points in the Japanese steel industry from territory that anti-Japanese Chinese forces controlled in December 1941.⁹⁰

The Allies understood that the steel industry served a vital role in a country at war and served as an incredibly valuable strategic target for that reason. For the Japanese Empire, any reduction in already inadequate steel production meant corresponding and immediate reductions in the production of many war materials. Virtually all types of industrial and railroad construction also required steel and any industrial expansion or repair thus depended upon steel production. As a partial counterbalance to the vulnerability of their steel industry, Japanese leaders chose which projects received how much steel, thus mitigating their own troubles to a certain degree by reducing steel allocations to lower priority projects and making an attack against Japan's steel industry an effort that would only show decisive results in the long-term. Nonetheless, if B-29s

⁹⁰A Japanese coke oven converted approximately one and two-thirds tons of high-grade coal to a single ton of coke. The production of a single ton of pig iron then consumed both a ton of coke and a substantial quantity of iron ore. Pig iron is the main ingredient in steel, unless scrap is recycled into usable steel; Japan imported tremendous quantities of scrap from the United States in the late-1930s, probably stockpiled some of it, and naturally produced its own scrap within the bounds of the Empire, but scrap never came close to being a majority of the raw material used, though its use was the most efficient fodder for the steel industry within Japan proper, where electrical power abounded and a ton of scrap replaced several imported tons of coal and ore or pig iron. Joint Target Group, *Japanese Coke Iron & Steel Industry: General Analysis*, in microfilm M1653, roll 2 (Washington, DC: National Archives); Charles Kring, *Bombing Effort Required to Knock Out Twelve Steel Plants in Japan, Korea and Manchuria*, in microfilm M1655, roll 23 (Washington, DC: National Archives); Schumpeter, *Industrialization*, 232–9, 256–66, 351–2, 362–5, 422–8, 446–9.

destroyed the over half of Japanese coke capacity accessible from bases located in China, Japanese production and construction would suffer across a wide range of industries.⁹¹

Another factor limited the effect of operations against the Japanese steel industry: the Japanese possessed an excess of coke manufacturing capacity in the home islands. The Japanese steel industry operated its mainland coke ovens and pig iron and steel plants at full capacity, taking advantage of locally, relatively abundant high-grade coal and iron ore. The Japanese merchant marine then shipped excess coke, pig iron, and steel to the home islands in place of raw coal and ore, thus saving a tremendous amount of merchant shipping for other duties. The Japanese built much of the steel industry in the home islands before the Empire acquired Manchuria and, as Manchurian facilities came on-line and dramatically increased their capacities, operated steel facilities within Japan at a reduced tempo that nonetheless still produced two-thirds of Japanese pig iron and almost ninety percent of Japanese steel. The Japanese steel industry thus possessed significant unused capacity in the home islands and could restore it to production by diverting shipping from other duties to convey raw coal and ore from the mainland to the home islands. Even without reductions in mainland production however, the Japanese merchant marine lacked the ships necessary to both fulfill its other obligations and to carry the amount of coal and ore required for the Japanese steel industry to make full use of the steel, pig iron, and coke oven assets in the home islands. The Japanese steel industry consumed over half of all Japanese import tonnage and required four times that

⁹¹Joint Target Group, *Coke*.

amount in order to fully utilize the ovens and furnaces in the home islands. The Japanese Empire simply lacked the merchant ships necessary to achieve full steel production.⁹²

The United States Strategic Bombing Survey states that “no country could have been further from self-sufficiency, with respect to raw materials, than Japan. It was desperately vulnerable to attack on its shipping.”⁹³ Raw materials and finished commodities could not move between Japan’s colonies, the home islands, and distant battlefields without using merchant shipping. The bulk of industry within Japan proper could not function without vast imports of raw and semi-processed materials. The Japanese Empire could not move fuel to air and naval schools in the home islands, to ground and air forces in Northeast Asia, or to fighting squadrons in the Central and Southwest Pacific without merchant ships. The Japanese economy depended upon massive quantities of imported resources and could not sustain industrialized economic activity without using equally massive shipping resources. Because of the singular importance of merchant shipping to every other military and economic activity within the Empire, Japanese shipping served as a more important target of Allied attack than any single industry ever could.⁹⁴

⁹²Inside Manchuria, the Japanese steel industry increased production of coke by over one hundred percent, iron ore by nearly one hundred percent, and pig iron by approximately seventy-five percent between 1933 and 1937 while actual steel production lagged dramatically behind those impressive figures. Ibid.; Schumpeter, *Industrialization*, 351–2, 362–3, 387–8, 404–9, 447–9.

⁹³Chairman Franklin D’Olier, *The United States Strategic Bombing Survey: Summary Report* (Maxwell Air Force Base, AL: Air University Press, 1987), 78.

⁹⁴Large merchant vessels carried over twelve million tons of Japanese imports during 1944. Smaller vessels, barges, and ferries carried in excess of fifty million tons of coastwise and inter-island cargo during the same period, including traffic between Korea and Japan. Resources within Japan proper supported virtually all Japanese demands for fuel coal and basic lumber. Japan also proved very nearly self-sufficient in copper. In the area of foodstuffs, the inner empire of Taiwan, Korea, and Japan maintained sufficiency with only a few specific vitamin deficiencies but Japan proper fell increasingly short of self-sufficiency in rice, dairy products, and fertilizer; without its fishing fleet, should a close blockade eliminate that source of food, Japan would also fall critically short of meat. Finally, Hokkaido exported food to the

For the Allies, the Japanese merchant marine presented a difficult target to attack decisively. The Japanese Empire used its merchant ships as its planners saw fit, suffering a high proportion of any economic damage in areas of minimal value. Japanese shipyards, furthermore, concentrated within Japan proper and lay as far from American attackers as any other industrial facilities in the home islands. Until the Allies could bombard the Japanese home islands, the Allies attacked the Japanese merchant marine primarily by attacking single ships and by rendering certain sea-lanes and ports dangerous or unusable. Because so many types of Allied assets could attack Japanese merchant ships but could not attack so many other branches of the Japanese economy, the Allies began a strategic offensive against the Japanese merchant marine. The Allied submarine fleet began to seek out the Japanese merchant marine in the depths of the Japanese Empire while land-based air units made the destruction of any Japanese merchant or naval vessel within reach their highest priority mission. The United States Navy increasingly attacked Japanese island ports across the Pacific while heavy bombers attacked ports and convoys and seeded mines in ports and waterways deep inside Japanese-held territory.⁹⁵

Knowing that the B-29s ought to attack shipping, coke ovens, urban industry, aircraft manufacturing, anti-friction bearing manufacturing, or the electronic or oil industry in order to support the Allied strategy of attacking the Japanese economy, planners then reviewed which of those targets B-29s could plausibly attack and from

other major Japanese islands; a blockade would sever the bulk of the Japanese population from that food source as well. In most other economic areas the Japanese depended almost totally upon imports. Joint Target Group, *Strategic Mining*; Schumpeter, *Industrialization*, 133, 151–3, 168–204, 225–39, 248–67, 307, 364–5, 307, 409.

⁹⁵Ibid., 614–6, 796–9; Craven and Cate, *Guadalcanal*, xv.

where. Given that the majority of the facilities and equipment belonging to industries on that list lay on the Japanese home islands of Honshu, Kyushu, and Shikoku, most top-level planners agreed that the Mariana Islands served as the most useful, eventual bases for the B-29s. Being islands with notable lagoons, merchant ships could provide logistical support almost directly from the United States to airbases on Saipan and Guam, and Japanese ground and aerial forces would pose only marginal threats after Allied forces secured the islands. From the Mariana Islands, Allied aircraft could finally, decisively attack the Japanese economy and begin to directly implement the Allied strategic plan to exhaust the Japanese ability to wage war.⁹⁶

Planners considered Mariana Islands bases to be less than ideal for one primary reason: few believed that Allied forces could seize the islands and prepare the airfields before late 1944 or early 1945. Planners hoped that the first wing of B-29 bombers would enter combat in mid 1944 and could not justify holding them out of combat while other forces seized and completed bases for the B-29s. The issue posed a problem for planners who needed to decide where best to employ the B-29s between when the B-29s began their combat service and when they could transfer to the Mariana Islands. The topic took on considerable urgency as various generals and admirals called for the almost mythically capable bombers to operate under their command for some special and urgent purpose, but simultaneously the topic lost considerable importance as Allied forces accelerated their drives across the Central and Southwest Pacific Theaters. Eventually, Allied forces

⁹⁶Ibid., 27–31.

invaded the Mariana Islands on the same day that the still not completely trained Twentieth Bomber Command carried out the first B-29 bombing mission.⁹⁷

When exactly the new units of B-29s would become combat ready served as a complicating factor for those who made the decisions about where and how to employ the new bombers. The first production B-29 rolled out the factory doors in July 1943 and general plans called for the planes to enter combat in the middle of 1944. Before that could happen, air and ground crews needed to learn how to do their jobs and both the fighting squadrons and their command and support organizations needed to deploy from their continental United States training bases to their combat bases. Meanwhile, engineers in the intended theater of operation worked to prepare not only all of those combat bases but also the logistical network connecting the bases to the continental United States.

All new military units transition through a phase during which the personnel learn to work together as a team and any unit that receives significantly updated or new type equipment must overcome a learning curve: the newly formed Twentieth Air Force, Twentieth Bomber Command, and Fifty-eighth Bombardment Wing (Very Heavy) encountered both problems simultaneously. The Twentieth's second wing, the Seventy-third Bombardment Wing (Very Heavy) followed shortly behind the Fifty-eighth in training and benefited somewhat from the experience gained by the pioneers. To ease the difficulties, Lieutenant General Arnold saw to it that the Pentagon assigned the Twentieth a cadre of veteran bomber men who previously completed tours in combat zones and rest periods at home. Even given the veteran cadre, or perhaps because of it, the Twentieth's leaders failed to allocate sufficient time to transform the assembled Twentieth Bomber

⁹⁷Ibid., xiv, 27–31; Hall, *Case Studies*, 272–3.

Command into an efficient combat unit. As the Twentieth formed and began to receive its equipment in mid 1943, the Twentieth fell steadily further behind in its schedule of training so that the unit's operational readiness date grew ever more grossly unrealistic.⁹⁸

The Twentieth Bomber Command's first commander, Brigadier General Kenneth Wolfe, planned to spend eight months training his command to operate its new steeds as a unit before deploying overseas. During those eight months the Fifty-eighth Bombardment Wing's four groups of sixteen total squadrons tried to learn to operate, alone and in groups and during all conditions, a brand new type of aircraft that came equipped with a number of radical new features. That the Twentieth could not achieve its training objectives became obvious long before the Twentieth's departure date came near and only shortly after construction began on the airbases in India and China. The Twentieth issued its tactical manual in February 1944, after nearly completing training, and sans still incomplete sections on photography, radar use, and navigation and emergency procedures. In March 1944, with equipment already in transit toward Asia, the Twentieth Bomber Command staff began to ask Eighth Air Force staff officers in Europe for their recommendations about which formations and techniques to use when bombing a variety of targets under various conditions of visibility. When the Twentieth began operating, the inability of its crews to assemble into formation, navigate over long distances, and

⁹⁸Wolfe, Interview; COL C. Duncan, *Headquarters, Forward Echelon, XX Bomber Command, Special Orders, Number 2, 8 April 1944*, in microfilm A7760 (Maxwell AFB, AL: Air Force Historical Research Agency); COL Kenneth Gibson, *Schedule for B-29 Movement*, in microfilm M1652, roll 3 (Washington, DC: National Archives); Craven and Cate, *Matterhorn*, 7, 18–21, 56–57; BG Haywood Hansell, *Memorandum to CG USSTAF*, in microfilm M1652, roll 3 (Washington, DC: National Archives).

manage their fuel supply proved the accuracy of reports that training in those skills remained inadequate.⁹⁹

Once the Twentieth Bomber Command began assembling and training, planners exerted little influence over that process and, taking the mid-1944 operational date as gospel, turned their attention to determining useful ways to employ the Twentieth before the Mariana Island bases became available. The Allied commander of the Southwest Pacific Theater, General Douglas MacArthur, and the Fifth Air Force commander, Major General George Kenney, asked repeatedly that the B-29s occupy bases in Australia and New Guinea and operate against Japanese shipping and oil resources. Admiral Ernest King, the Chief of Naval Operations of the United States Navy, and Admiral Chester Nimitz, commander of the Allied Central Pacific Theater, halfheartedly asked that the B-29s work in the Central Pacific as reconnaissance and bombing aircraft; the Navy approach offered the Twentieth the opportunity to help to directly win its own ultimate bases but contributed little to the strategic attack against the Japanese economy and never entered serious consideration. General Arnold sought to keep the Twentieth out from under the command of theater commanders and to find a place from which it could attack the Japanese home islands. President Roosevelt, Major General Chennault, and Generalissimo Chiang all embraced the idea of basing the Twentieth in China and using the organization to attack the Japanese home islands, to support Chinese prestige and morale, and to funnel more supplies and money into China. Prime Minister Churchill and

⁹⁹The B-29 came equipped with such new features as remotely controlled gun turrets, a pressurized cabin, and a radar bombsight. Wolfe, Interview; COL C. Duncan, *XX Bomber Command, Special Orders*; COL Kenneth Gibson, *B-29 Movement*; Craven and Cate, *Matterhorn*, 7, 18–21, 56–57; Saunders, *Tactical Doctrine*; GEN Haywood Hansell, *to CG USSTAF*; Kuzman, “Fuel and Bomb Loads;” Youden, “Formations;” Headquarters, Twentieth Bomber Command, “The Chengtu Project,” RG 18, Sk 190, R 55, C 33, Sf 4, B 300, National Archives.

other British leaders sought to have the Twentieth base in India, to report to if not accept many orders from British officials in India, and to attack both the Japanese lines of communication in Southeast Asia and the Japanese oil industry in the Netherlands East Indies.¹⁰⁰

Diplomatic intrigue and inter-service rivalry played a significant role in determining the employment of the B-29 force before they deployed to the Mariana Islands. Other Army Air Force leaders reacted negatively toward Army Air Force Major General Kenney's attempts to gain use of B-29s because few in the Army Air Force desired to place their newest baby under the control of the powerful General MacArthur, who commanded Kenney and the whole Southwest Pacific Theater. Kenney's chances steadily declined along with relations between the United States and Australia, where Kenney wanted to base the bombers; free of any threat of invasion, the Australians reasserted themselves beginning in 1943 and would have wanted a share in controlling any B-29s based in their country. British leaders experienced much the same rebuff whenever anyone made suggestions about basing the first B-29s in India; commanders in India could not avoid coordinating with Lord Admiral Louis Mountbatten, commander of the Allied Burma-India Theater, who even the British Commander in Chief, Far Eastern Fleet, Admiral Sir James Somerville noted "wanted a finger in every pie," because of diplomatic considerations, and no prominent American advocated placing B-29s under British command. No responsible American seriously considered putting Generalissimo Chiang, the titular commander of the Allied China Theater in actual command of American strategic bombers either, and Chiang lacked the leverage to gain any control

¹⁰⁰Kenney, letter to Arnold, October 29, 1943; Hall, *Case Studies*, 272–3; Burns, *Roosevelt*, 204–5, 375; Hansell, *Strategic Air Against Japan*, 19; Craven and Cate, *Matterhorn*, xiv, 12.

that the United States did not voluntarily give him. After weighing these situations, Army Air Force leaders supported the idea of basing the first B-29s in China, where they might bomb as an independent, strategic force.¹⁰¹

Diplomatic and political concerns thus became predominant reasons for sending the first operational B-29 squadrons to China rather than to another area of the Pacific Theater. From China, B-29s could make the Army Air Force the first to mount sustained attacks against the Japanese home islands and possibly make a decisive contribution to winning the war, thus cementing the Air Force claim to deserving status as a branch within the armed forces of the United States. More personally, General Arnold missed his chances to command aerial combat units in either world war and found China to be a theater where he could justify commanding a separate air force directly from his office in the Pentagon in spite of simultaneously disobeying Army Air Force doctrine, published under his own command, that called for theater commanders to command strategic air forces based in their theaters. President Roosevelt considered China to be the best place to send the B-29s not only because of their ability to bomb Japan from China but also because he desired to use the B-29s to support Generalissimo Chiang's internal and international position and status, though exactly how moving the force to China would aid Chiang's struggle to gain control of his country never became clear. Chiang's false intimations of surrendering to Japan caused Roosevelt genuine fear, and though that fear faded as the Fourteenth Air Force grew and the Japanese began no strategic offensives against China 1943, Roosevelt felt other reasons to aid Chiang. Roosevelt supported

¹⁰¹War Department, "Plan for Air Operations in China;" Craven and Cate, *Matterhorn*, x-26; Hall, *Case Studies*, 272-3; Hansell, *Against Japan*, 19-27; GEN Henry Arnold, letter to BG Kenneth Wolfe, April 26, 1944, in microfilm 43836 (Colorado Spring, CO: United States Air Force Academy); Thorne, *Allies of a Kind*, 307-347.

Chiang personally, still believed that China could serve a prominent role in both war and peace, and allowed the decision to reflect his personal distaste for Lieutenant General Stilwell's tactless behavior. Only in China could the B-29s serve the dual purpose of appearing to aid China and promoting Air Force independence as a new military service without encountering powerful Army, Navy, or foreign leaders who would usurp the Army Air Force's authority over the new force.¹⁰²

Target selection served as the other major factor that helped to determine where the Twentieth Bomber Command landed after it left the United States. During World War II, essentially every United States Army and Army Air Force leader of consequence believed that strategic bombers ought to attack strategic targets, as opposed to targets of only tactical significance, though some leaders considered targets to be tactical or strategic that others believed to be the reverse. From bases in India, B-29s could attack Japanese oil resources in the Netherlands East Indies, the significant fraction of Japanese merchant shipping that passed near French Indochina and the Malay Peninsula, and Japanese lines of communication through Southeast Asia, but would come under the titular command of a Briton. From Australia and New Guinea, B-29s could attack the sources of Japanese oil and the important and numerous merchant vessels that carried the resources of the Netherlands East Indies to the remainder of the empire, but the new force might fall under the influence of Australian or British leaders there and would certainly come under the command of the famous General MacArthur. From China, B-29s could attack the most important parts of the Japanese steel industry and, to a lesser extent, every

¹⁰²Craven and Cate, *Matterhorn*, x-26; U.S. Army, "Political Scene;" Hall, *Case Studies*, 272-3; *FM 100-20 Field Service Regulations, Command and Employment of Air Power*, July 21, 1943, in microfilm 43835 (Colorado Springs, CO: Air Force Historical Research Agency), 1-11; Hansell, *Against Japan*, 19-27; Burns, *Roosevelt*, 374-9.

other arm of the Japanese economy with minimal risk of interference by foreign or non-Army Air Force leaders. Steel seemed like an acceptable target and carried little of the political baggage that would accompany any operation against shipping or oil targets.¹⁰³

Having determined that the Twentieth Air Force might base in China, India, or the Southwest Pacific, though the China option seems to have been almost a given due to other considerations, planners sought to determine whether, where, and how suitable bases might be constructed and defended in those areas. In October 1943, Lieutenant General Kenney wrote to General Arnold that he commanded five bases in northern Australia large enough to accommodate twenty-five B-29s each and was overseeing the construction of six more such fields in New Guinea besides having five months to construct any further fields that might be necessary. Ground and aerial defense of northern Australia posed no difficulty to the Allies after 1942 and though Japanese forces might attack bases in New Guinea by air, no significant Japanese ground threat to eastern and southern New Guinea remained plausible by late 1943. The defensive situation for B-29 bases in India appeared similar to that in New Guinea, with the failed 1944 Japanese Imphal offensive as evidence of a slightly increased ground threat, but India held no bases suitable for B-29s. In India and Ceylon, if the B-29s staged through that island to attack the Netherlands East Indies, the overstretched British military and sullen and uncooperative Indian civilians might construct temporary bases but only American engineers and equipment could have forged the Twentieth a rainy season-proof home.

¹⁰³Craven and Cate, *Matterhorn*, xiv–28; Hulin, letter to American Mission; “Sunderland-Perry,” *Summary and Evaluation of First 28 Missions of XX Bomber Command*, in microfilm M1655, roll 40 (Washington, DC: National Archives); George Fearing, Jr., “The Contribution of the XX Bomber Command to the Battle of Burma,” RG 18, Sk 190, R 55, C 33, Sf 4, B 300, National Archives; “Report of Aerial Mining Operations in the Approaches to Singapore, Saigon, and Camranh Bay,” RG 18, Sk 190, R 55, C 33, Sf 4, B 300, National Archives.

Beyond these problems, India simply lay further from and along more dangerous shipping lanes from the United States than did Australia and New Guinea. Within the respective theaters, prospective bases in India also lay dramatically further from the nearest ports than did those in the Southwest Pacific. The difficulties presented by basing in India nonetheless paled in comparison to those to be encountered if the Twentieth went to China.¹⁰⁴

China served as by far the least suitable proposed country in which to build bases for the Twentieth Air Force. Planners suggested three possible base areas within China: along the rail line south of Changsha, near Kweilin and Luichow in southeastern China, and around Chengtu in western Szechwan Province. Generalissimo Chiang and Major General Chennault promised and apparently believed that the Chinese Army would and could defend the Twentieth's bases, but Changsha lay too close to Japanese forces for comfort and did not receive serious consideration. Southeastern China also lay well within Japanese reach, being connected by navigable rivers to the Japanese strongholds of Canton and Wuhan and closer to those places than to Chinese forces that held the Yangtze River gorges for the Kuomintang. The Fourteenth Air Force ensured that some of its bases in southeastern China could accommodate B-29s for special missions, but the Twentieth could not reasonably move to an area so exposed to attack. Chengtu, unlike the

¹⁰⁴Kenney, letter to Arnold, October 29, 1943; Northern Territory Government, *History of the Darwin Port*, website on-line (Darwin, Australia: 1997); MG George Stratemeyer, letter to GEN Henry Arnold, October 31, 1943, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); Twentieth Bomber Command, "Chengtu," Colonel A. Gado, "Information for House Sub-Committee on War Department Appropriations on Industrial and Agricultural Development and Possibilities in China," RG 493, Sk 290, R 42, C 30, Sf 3-6, B 33, National Archives; Baird, *Hijli Base Area, 30 April 1945*; COL L. Sailor, *Diary of Army Air Field B-2 Operations, 1 September 1944 to 31 October 1944*, in microfilm A7760 (Maxwell AFB, AL: Air Force Historical Research Agency); 1LT Robert McConnell, *Narrative History of Hijli Base Area*, in microfilm A7760 (Maxwell AFB, AL: Air Force Historical Research Agency).

other China locations, did not lay within easy or likely reach of Japanese ground forces or even of short-range Japanese aircraft. The Chengtu area did hold an enormous population, being an agricultural basin amidst encircling mountain ranges, and offered poor road and river access and essentially no construction equipment availability. For the Twentieth Air Force, the Chengtu area offered only a mass of unskilled labor that the Chinese government put to work to build bases there for the Twentieth Bomber Command.¹⁰⁵

For planners, providing logistical support to the Twentieth Bomber Command played an inordinately small role in determining where to deploy the force. Naturally, Australia served as the most suitable choice of places from which to operate the Twentieth; Darwin lay close to prospective B-29 airbases and boasted adequate port facilities to handle a heavy volume of traffic. New Guinea offered no great port facilities, but prospective bases at least lay near beaches and small ports; New Guinean bases would also require relatively few supplies because the B-29s would undoubtedly only stage through them from nearby permanent bases in Australia. Prospective bases around Kharagpur, India relied on longer and more difficult sea lines than did Australia and also relied upon a heavily burdened Indian logistical system that already supported the land and air efforts in Burma and China. For the Services of Supply, of course, Chinese bases provided the least attractive place in which to support the Twentieth. Chinese bases began

¹⁰⁵Chennault, letter to Arnold, May 16, 1944; Greenfield, *Mission*, 301; Craven and Cate, *Matterhorn*, xvi, 24; Twentieth Bomber Command, "Chengtu," Gado, "Possibilities in China."

with all the disadvantages of Indian bases and then added both the Himalayan Mountains and hundreds of miles of further distance beyond them as additional obstacles.¹⁰⁶

Planners chose for the Twentieth Bomber Command to base on mainland Asia and to attack the Japanese steel industry, in preference to the other base and target combinations, by weighing relative values and essentially ignoring obvious difficulties. American planners discarded the idea of attacking Japanese lines of communication through Southeast Asia because they lacked substantial strategic value. Planners decided not to heavily attack Japan's oil industry because submarines and advancing Allied ground bases already hindered, and would soon almost strangle, the shipping lanes between Japan and the Netherlands East Indies. Planners dismissed shipping as a primary target because some planners believed that heavy bombers lacked the precision to attack ships, others objected to duplicating the efforts of the other ships and planes that already attacked the Japanese merchant marine at every opportunity, and no important person in the Army Air Force desired to place B-29s under the influence of General MacArthur and the Australians or of Lord Admiral Mountbatten and the British. President Roosevelt desired to help Generalissimo Chiang and the Army Air Force desired to use its largest bomber against traditionally strategic targets without interference. No leader accepted that the Himalayas might prove an insurmountable barrier to adequate logistical support.¹⁰⁷

¹⁰⁶Darwin lay virtually on the front lines for much of 1942 after the Japanese seized the north coast of New Guinea. Throughout 1943, Darwin slowly became a backwater, having hosted and supported many of the forces that counterattacked into New Guinea during 1943, and was eminently capable of hosting yet another influx of forces. By contrast, the logistical situation in China seemed constantly and especially grave because the number of transport aircraft assigned to the Hump always fell far below projections. Craven and Cate, *Matterhorn*, 18–21; Northern Territories, *History of the Darwin Port*.

¹⁰⁷Craven and Cate, *Matterhorn*, 27–52; Burns, *Roosevelt*, 374–9.

Arguments against attacking Japanese communications through Southeast Asia made perfect sense and found substantial agreement among American planners. The target supported only the Burma front, where Allied forces failed to seriously contemplate any large offensives and stood upon a solid defensive. Economic assets flowed through and near Southeast Asia, but those from the Netherlands East Indies could also flow around the area, closer to the Philippine Islands, with little difficulty. If the Twentieth Bomber Command were to drop a bomb on a Burmese bridge or a Bangkok railroad yard then it would also fail to drop that bomb on a target of notable value to the Japanese economy. For the Twentieth, the Southeast Asia lines of communication did present an opportunity to attack Japanese merchant shipping, but the ships would be only one target among many and would suffer little as compared to if the Twentieth attacked shipping exclusively.¹⁰⁸

Arguments against directing the Twentieth Bomber Command to attack the Japanese oil industry also followed an arguably logical vein. The B-29s could bomb synthetic and shale oil facilities in Manchuria from bases in China, but those facilities provided only a small proportion of Japanese fuel, drained many other resources from the Japanese war effort, and would fall intact into friendly Chinese hands if not destroyed during the war. Regarding oil from Southeast Asia, Allied submarines targeted Japanese oil tankers with increasing effectiveness as the war went on and Allied forces aimed to occupy the Philippine Islands and place an unbreakable blockade across the strait between Luzon and China, thus cutting Japan off from the oil, and all of the other resources, of the Netherlands East Indies, without having to destroy those resources. One

¹⁰⁸Craven and Cate, *Matterhorn*, 27–52; Kenney, letter to Arnold, October 29, 1943.

factor, however, encouraged the use of B-29s against Palembang and Balikpapan and the other centers of the oil industry in the Netherlands East Indies: from bases as distant as Broome and Darwin, Australia, a B-29 could carry between ten and twenty thousand pounds of bombs to any important oil facility in the Netherlands East Indies. No oil industry could long operate while sustaining attacks of that magnitude and the Twentieth could thus cut off, more quickly and thoroughly than submarines or blockade, the flow of oil not only northward toward Japan proper but also to anywhere else in the empire and to Japanese naval vessels that trained and operated from Southeast Asia primarily because there their fuel supply proved relatively secure.¹⁰⁹

One argument against using the Twentieth Bomber Command against Japanese merchant shipping stated that heavy bombers made poor anti-shipping platforms, but heavy bombers, and especially B-29s, made excellent anti-shipping platforms if employed correctly. As long-endurance, night capable, radar equipped, self-protecting reconnaissance platforms, B-29s would have been unmatched in their ability to search for enemy ships at great distances from friendly airbases. B-29s could have bombed ports, together with the ships inside the ports, with heavier bomb loads than those carried by any other American aircraft. Alternatively, B-29s could have attacked ports beyond the reach of any other Allied aircraft, thus increasing the number of points at which the Japanese merchant marine suffered damage and decreasing the number of places where Japanese ships could safely hide from Allied submarines. B-29s also would have excelled, did in fact excel throughout the last year of the war, as long range, high-

¹⁰⁹Schumpeter, *Industrialization*, 239, 267, 412–8; Craven and Cate, *Matterhorn*, 4–12; Samuel Morison, *United States Navy in World War II*, 15 vols. (Boston: Little, Brown, 1948–93), *Vol. XII, Leyte, June 1944–January 1945*, 69.

capacity dispensers of naval mines used to damage, harass, and channel enemy shipping. B-29s definitely did not serve as the weapon of choice for attacking individual ships at sea, but even in this area another heavy bomber type, the B-24, proved quite useful during the Battle of the Atlantic.¹¹⁰

Whether all of these uses would have been a wasteful duplication of effort is a question that can be answered by reference to long-standing principles of war: the principle of mass dictates that forces should be massed at the point of main effort. The B-29 proved to be an exemplary tool for attacking shipping, if it were not useful then its use against shipping would clearly be unjustifiable; B-29 mining complemented the efforts of submarines and smaller aircraft in the war against shipping not only by simple destruction but by delaying and rerouting Japanese ships, channeling them toward waters where other menaces knew to lurk. The concentration of strategic assets to achieve tactical goals may be justifiable only in extreme circumstances, such as the arguably worthwhile rail bombing campaign in northern France and the Low Countries before the Normandy invasion, but Japanese shipping as a whole constituted a strategic, rather than a tactical target. Japan's shipping, the key link in the Japanese economic chain, was already being attacked at every opportunity by submarines, land- and carrier- based aircraft, and surface ships—shipping was what the Twentieth Bomber Command should have targeted.¹¹¹

¹¹⁰Craven and Cate, *Matterhorn*, 27–31; Moorer, *Interrogation*; Minami, *Interrogation*; Joint Target Group, *Strategic Mining*; Morison, *Battle of the Atlantic*, 240–51.

¹¹¹Craven and Cate, *Matterhorn*, 27–31; Moorer, *Interrogation*; Minami, *Interrogation*; Joint Target Group, *Strategic Mining*.

In order to prove that strategic bombing really could work, Army Air Force planners wanted to aim the Twentieth Bomber Command at the Japanese steel industry, despite the obvious difficulties of China and the real advantages of attacking shipping. Some targets within the steel industry lay on Kyushu and the United States Army Air Force wanted to begin an early bombardment of Japan, ignoring the fact that Matterhorn's main targets lay not in Japan proper but in Manchuria. In choosing China, planners ignored the facts that any operation conducted over the Himalayan Mountains using bombers to carry their own supplies could not possibly qualify as sustained and thus could not realistically expect to achieve decisive results. Some planners also felt that steel served as the most important, accessible, strategic target but many other planners believed that shipping placed equal to or even higher than steel in any computation of relative values. The latter were correct: shipping served as the single most important target within the Japanese empire. Japan's steel industry operated below capacity, in spite of Japan's tremendous need for steel, because the amount of merchant shipping that was available to the empire proved insufficient to meet Japanese needs. The best method by which to further reduce Japanese steel production was not to attack partially redundant steel facilities but to further reduce Japan's available shipping, a process that would yield the side benefit of reducing many other aspects of Japanese military and economic activity as well. The fact that the United States military charged across the Pacific Ocean, ever farther ahead of the planned timetable, also limited the utility of attacks against steel because steel would serve as a more valuable target in a long than a short war. Even before Matterhorn definitely failed, planners essentially conceded the validity of the arguments against targeting the Japanese steel industry by planning to transfer the

Twentieth out of China as soon as bases in the Mariana Islands could be made operational.¹¹²

Twentieth Bomber Command's air squadrons flew out of the United States in late-March and arrived in Kharagpur, India in April 1944. The Twentieth then began to divide its ground crewmen between India and the bases around Chengtu, China and to build-up supplies. Placing the majority of its maintenance facilities in India, the Twentieth planned to stage through Chinese bases to attack targets in Manchuria and Japan and on Formosa. The bases in India and at China Bay, Ceylon served when the Twentieth conducted operations directed toward Indo-China, Malaya, and the Netherlands East Indies. The coke ovens of the Japanese steel industry served as the primary targets of operation Matterhorn, but planners also marked numerous, secondary targets for destruction.¹¹³

¹¹²Craven and Cate, *Matterhorn*, 26–30; Haywood S. Hansell, Jr., *The Strategic Air War Against Germany and Japan: A Memoir* (Washington, D.C.: Office of Air Force History, United States Air Force, 1986), 142.

¹¹³Craven and Cate, *Matterhorn*, 26–31.

CHAPTER 6

EXECUTING MATTERHORN

The Fifty-eighth Bombardment Wing (Very Heavy) of the Twentieth Bomber Command encamped on mainland Asia on a quest “to achieve the progressive destruction and dislocation of the Japanese military, industrial and economic systems and the undermining of the morale of the Japanese people to a point where capacity for armed resistance is decisively weakened.”¹¹⁴ The Seventy-third Bombardment Wing (Very Heavy) originally planned to join the effort at a later date but deployed instead to the Mariana Islands as a component of the Twenty-first Bomber Command after the Fifty-eighth proved the utter unsuitability of Chinese basing. A mere sixteen squadrons of one hundred forty-four total B-29s, manned and supported by over twenty thousand men, thus comprised the whole effort of the Twentieth in Operation Matterhorn. The small size of the ultimate force notwithstanding, engineers constructed the Chengtu facilities and defensive forces accumulated to protect those facilities as if the involved bomber force were twice the size that the Twentieth actually attained. Furthermore, the task of adequately supplying even the reduced Matterhorn force proved to be beyond the available capabilities of the United States. The small size of the Matterhorn force, logistical difficulties, and training deficiencies condemned Operation Matterhorn to fail to achieve its objectives.¹¹⁵

¹¹⁴Monro MacCloskey, *The United States Air Force* (New York: Frederick A. Praeger, 1967), 51.

¹¹⁵Gibson, *B-29 Movement*; VHB Project Office, *Movement Table for Second Wing of Matterhorn, 1944*, in microfilm M1652, roll 3 (Washington, DC: National Archives); Craven and Cate, *Matterhorn*, 55.

Japanese aircraft posed the only immediate threat to the Twentieth Bomber Command's advance bases around Chengtu, China. Guided to their targets by fires lit by irregular forces on the ground and aided in their efforts by occasional sabotage against the American installations, Japanese aircraft frequently visited Chengtu. Attacking in small numbers, usually at night, Japanese activities never seriously threatened Matterhorn and rarely inflicted damage, but over the course of months the toll added up to a significant drain on the efforts of both the Twentieth and the Air Transport Command, which used the fields while moving supplies into and within China. On one particularly successful raid, on November 21, 1944, two Japanese aircraft heavily damaged three B-29s and a C-109 besides destroying and damaging various other supplies.¹¹⁶

The Fourteenth Air Force carried the responsibility for providing protection for Chengtu against such raids, but never succeeded in preventing pinprick, night raids by Japanese bombers. The Fourteenth deployed the Three Hundred Twelfth Fighter Wing, with two squadrons of gas guzzling P-47 fighters and with two squadrons of older model P-51s, at the six fighter bases around Chengtu to serve as daytime interceptors; of these, the P-47s possessed too short a range and too high a fuel consumption for more offensive use by the Fourteenth, but the force quickly put an end to Japanese thoughts of daytime attacks against Chengtu. Japanese night operations remained essentially unhindered by Allied air opposition until a single flight of P-61s of the Four Hundred Twenty-sixth Night Fighter Squadron began operating near Chengtu in October 1944. This flight, the

¹¹⁶Prestin, *September*; 1LT Carl Prestin, *Forward Echelon Detachment, XX Bomber Command, History for the Month of October, 1944*, in microfilm A7760 (Maxwell Air Force Base, AL: Air Force Historical Research Agency); 1LT Carl Prestin, *Headquarters, XX Bomber Command, History November 1944*, in microfilm A7760 (Maxwell Air Force Base, AL: Air Force Historical Research Agency); 1LT Carl Prestin, *Headquarters, XX Bomber Command, Forward Echelon Detachment's History for December 1944*, in microfilm A7760 (Maxwell Air Force Base, AL: Air Force Historical Research Agency).

first Allied night fighters in the theater, built up to squadron strength, gained practice, and began to shoot down occasional Japanese raiders, but not even these hunters in the darkness could put a stop to the Japanese nighttime attacks that continued, albeit with decreasing effect and frequency, until well into 1945. Japanese attacks against Chengtu drew Allied aircraft and supplies into a nearly irrelevant and largely uneventful defensive battle wherein a handful of Japanese attackers tied down larger numbers of American aircraft while suffering few, and inflicting only slightly more, losses.¹¹⁷

While considerable, resources consumed by defensive efforts against Japanese attacks, even taken together with damage inflicted by the attacks themselves, paled in comparison to the assets consumed by the Twentieth Bomber Command in the course of its lifespan, and first among those resources were those consumed by the construction of the Twentieth's various airfields. The United States paid approximately one hundred fifty million American dollars to the Chinese government for four bomber and six fighter bases around Chengtu, China. Up to three hundred sixty-five thousand Chinese peasants: men, women, and children, worked on site at any given time, almost entirely by hand, for a period of six months. The United States also paid an additional twenty million dollars for thirty-three thousand American and Indian soldiers and civilians to enlarge five, fair weather bases at Kharagpur, India over the course of four months, but without making the bases capable of monsoon season operations. Finally, the enlargement and modernization of a single airbase at China Bay, Ceylon cost the United States a modest sum of money.

¹¹⁷Chennault, letter to Arnold, May 16, 1944; MG Claire Chennault, letter to LTG Henry Arnold, August 8, 1944, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); Chennault, letter to Arnold, September 14, 1944; Chennault, letter to Arnold, October 10, 1944; Chennault, letter to Arnold, November 11, 1944; Chennault, letter to Arnold, December 17, 1944; Romanus and Sunderland, *Time Runs Out*, 26.

By way of comparison, less than four thousand United States soldiers built the eventual B-29 bases on Saipan, in the Mariana Islands, in just over three months without paying exorbitant exchange rates or drafting farmers from the fields of countries ripped by malnutrition.¹¹⁸

After deployment, the Twentieth Bomber Command suffered more from the pernicious effects of supply deprivation than from enemy action. In anticipation of the excellent results that planners expected from the late 1943 heightening of the strategic bombing campaign against Germany, planners at the Quebec Conference in August 1943 agreed to provide hundreds of B-24 bombers from Europe for conversion to C-87 cargo and C-109 tanker transports to provide the logistical support that Operation Matterhorn required. As Germany proved more resilient than anticipated, the Eighth and Fifteenth Air Forces in Europe expended some of those B-24s in combat and could not spare most of the others from bombing efforts, thus depriving Matterhorn of its planned support mechanism and calling the entire operation into question, until the decision was made to use the B-29s themselves to transport supplies from India to China. Though the decision to make the Matterhorn force primarily responsible for its own airlift between India and China occurred well before the Twentieth began operations, the decision filtered its way only fitfully through the chain of command, causing confusion, surprise, bad feelings, and low combat sortie rates for months after the Twentieth began combat operations but unexpectedly remained the major link in the its own logistical chain over the Himalayan Mountains. The Japanese Ichigo offensive further aggravated the Twentieth's logistical situation by encouraging the Fourteenth Air Force to divert its combat attention from anti-shipping and counter-air operations to relatively more intense ground support

¹¹⁸Twentieth Bomber Command, "Chengtu."

operations, and its transport attention to ferrying Chinese troops, both in order to protect its airfields and to assist the Chinese Army. To support the Fourteenth's increased sortie rate and to make up for what the Fourteenth failed to move while it moved Chinese troops instead, the Joint Chiefs of Staff allocated a larger than planned share of the logistical support that trickled over the Himalayas from India via the Air Transport Command to the Fourteenth, thus undercutting the Twentieth even before the Twentieth began its own operations.¹¹⁹

Twentieth Bomber Command remained primarily responsible for moving its logistical support from India to China for the first six months of its operational experience. Twenty C-87s flew to Asia to support Operation Matterhorn in January 1944 and labored alone until the Twentieth's one hundred forty-four B-29s arrived in March and April of that year, carrying a spare engine each and immediately commencing supply runs over the Himalayas. Three squadrons of C-54s and C-46s joined the Air Transport Command in North Africa to help speed critical cargo to the Twentieth in Asia, but C-46s only gradually filtered into the Twentieth's Hump and intra-China airlift efforts, beginning in April 1944 and reaching a strength of thirty-eight aircraft by the end of August of that year. Finally, in September 1944, the long-awaited C-109 tankers began to arrive in India, but severe maintenance difficulty and Hump orientation training rendered them nearly ineffective until well into October as the force built up to an eventual seventy airplanes. The Twentieth's B-29 squadrons experienced their own difficulties during

¹¹⁹COL Brandon Barringer, *Personal History of Statistical Control in the Army Air Forces*, in microfilm 43835 (Colorado Springs, CO: Air Force Historical Research Agency); Roger Miller, "American Air Logistics in the China-Burma-India Theater During World War II, 1942-1945," 20-23; Sailor, *Air Field B-2 Operations; Summary and Evaluation*; GEN Albert Wedemeyer, radio message to General George Marshall, CFBX 26359, 15NOV44, RG 493, Sk 290, R 42, C 30, Sf 3-6, B 26, National Archives; Craven and Cate, *Matterhorn*, 93, 120-5.

supply missions: the bombers lacked specialized conversion equipment that would have allowed them to carry larger loads and bases in India lay well beyond a thousand miles and one very large mountain range away from Chengtu, leaving little fuel to be drained from the fuel tanks in China for each supply sortie flown. Growing experience and the eviction of the Japanese from northern Burma by Stilwell's forces combined to assist the Twentieth to achieve greater efficiency; for example, the bombers eventually began to offload most of their machinegun ammunition in China on each supply sortie, both in order to save fuel on the return trip and for use by the Fourteenth Air Force in return for a portion of its Hump tonnage. Regardless of improvements in technique and support, however, for their entire stay on mainland Asia the Twentieth's B-29s spent most of their flying hours, two thousand three hundred seventy eight of their first two thousand eight hundred sixty seven B-29 hours and often a week per combat mission later in the campaign, hauling supplies from India to China.¹²⁰

One of the logistical difficulties facing the Twentieth Bomber Command was maintenance. The B-29 carried numerous, innovative features to aid crews in flight that required intensive maintenance by highly skilled mechanics on the ground. The R-3350 engine ranked chief among trouble causing mechanisms on the B-29; it tended to explode without warning while in flight and suffered so badly from dust that each B-29 deploying from the United States to India carried a spare engine and parts rather than its full combat crew, as had been planned. Experience improved maintenance, of course, so that the July 1944 average of eight hours of maintenance per hour that the aircraft spent in flight fell, by January 1945, to two hours forty-eight minutes. These maintenance hours, combined

¹²⁰Sailor, *Airfield B-2 Operations*; Miller, "Air Logistics," 20–23; Tunner, *Over the Hump*, 43–59; *Summary and Evaluation*; Craven and Cate, *Matterhorn*, 93, 120–5.

with the splitting of ground crews between the China and India bases, nailed the Twentieth's average B-29 to the ground for days between supply runs and sorties during the early months of Operation Matterhorn. Such immobility served to warn the Japanese of impending missions, presented lucrative targets to Japanese attackers, and delayed the logistical build-ups for every mission.¹²¹

Twentieth Bomber Command suffered more than simply a reduced sortie rate from its dearth of logistical support. The Forward Echelon Detachment, which served full time in China, "felt like orphans," with predictable results for morale and efficiency until late in August 1944, when the first comfort supplies and entertainment began to arrive. For its entire stay in China, the Detachment also coped with a severe, if slowly alleviating, shortage of automotive vehicles and the logistical support and maintenance personnel to care for the vehicles available. Some of the few available vehicles aided continuing work to expand the Chengtu airfields and transfer supplies between the Chengtu area bases, thus leaving even fewer available for use in maintenance and command and control tasks. Morale suffered due to lack of working vehicles, but the problem also directly inhibited aircraft maintenance and servicing and security arrangements for the entire base area.¹²²

¹²¹Kohn and Harahan, *Strategic Air Warfare*, 55; COL W. Newhall, *Possible Causes for Fires and Explosions of B-29 Aircraft*, in microfilm 43835 (Colorado Springs, CO: Air Force Historical Research Agency); COL C. Duncan, Letter to GA Henry H. Arnold, March 7, 1945, in microfilm 43835 (Colorado Springs, CO: Air Force Historical Research Agency).

¹²²Prestin, *August*; Prestin, *September*; Prestin, *October*; Prestin, *November*; Prestin, *December*; CPT Carl Prestin, *Headquarters, XX Bomber Command, Concluding History of the Forward Echelon Detachment, January 1945*, in microfilm A7760 (Maxwell Air Force Base, AL: Air Force Historical Research Agency); *338th Signal Company, Wing, Extract of Unit History*, in microfilm A7760 (Maxwell AFB, AL: Air Force Historical Research Agency).

After two months of supply flights, many conducted as practice combat missions in an unsatisfactory arrangement that provided neither adequate quality of training nor efficient movement of supplies, the Twentieth Bomber Command planned to begin combat operations with an acknowledgement of its inadequate training and a gesture to the ground forces in Burma and India upon whom Operation Matterhorn depended by attacking a Bangkok, Thailand railroad yard. Flying from India to conserve Hump airlift tonnage, the Twentieth hoped to taste combat while masking its formation flying and gunnery inadequacies by attacking at night—until General Arnold vetoed the idea as being of little training value and mandated that the mission be run during daylight. On June 5, 1944, the Twentieth launched ninety-eight B-29s against Bangkok, lost five aircraft to various causes, and actually bombed the target with seventy-seven B-29s carrying an average of nearly five tons of bombs each. Fifty B-29s dropped their bombs by radar aiming, but neither they nor their visually bombing compatriots aimed very well, with fewer than twenty bombs hitting within the target area, an area vastly larger than Matterhorn’s primary coke oven targets, and correspondingly modest damage inflicted upon the rail facilities. The raid exhibited the poor training of the Twentieth, which difficulty set the pattern for most of the Twentieth’s early operations.¹²³

Mission number two by the Twentieth Bomber Command marked the beginning of the coke, iron, and steel attacks that formed the centerpiece of the Operation Matterhorn plan. On the night of June 15, 1944, sixty-eight of the ninety-two B-29s that staged from Kharagpur to Chengtu the previous day took off to attack the massive Yawata steel factory and fewer than sixty dropped their bombs anywhere near the

¹²³Craven and Cate, *Matterhorn*, 94–98; Kuzman, “Fuel and Bomb Loads,” *Summary and Evaluation*.

massive Yawata complex. Seven B-29s fell to Japanese defenses or mechanical difficulties too severe to survive and the two tons of bombs dropped per aircraft inflicted no useful damage upon the Yawata complex, though several bombs hit other industrial targets in the general vicinity of Yawata. Mission number two consumed the bulk of the four thousand tons of supplies stockpiled around Chengtu during the laborious buildup from April to mid-June 1944 and necessitated a long stand down from combat operations for further logistical efforts.¹²⁴

Six weeks lay between missions two and four of the Twentieth Bomber Command. The force concentrated upon ferrying desperately needed supplies and conducting desperately needed training, hoping to continue its coke, iron, and steel program with renewed vigor after building up a huge stockpile of supplies in China. As if to keep American morale up and Japanese morale down in the midst of the hiatus, on the night of July 7, eighteen of twenty-eight B-29s staged at Chengtu attacked several targets in the Japanese home islands but neither inflicted nor, given the lack of photographic follow-up, expected noticeable damage with their roughly two tons of bombs per plane.¹²⁵

Missions number four, seven, eight, and nine followed in a comparatively rapid fashion as the Twentieth Bomber Command strove, and failed, to achieve the primary objective of Operation Matterhorn, the destruction of Japanese coking capacity. The Twentieth launched three daylight missions against the crucial Showa steel factory at

¹²⁴Kuzman, "Fuel and Bomb Loads;" *Summary and Evaluation*; Craven and Cate, *Matterhorn*, 99–103.

¹²⁵Kuzman, "Fuel and Bomb Loads;" *Summary and Evaluation*; Craven and Cate, *Matterhorn*, 104–105.

Anshan, Manchuria and another day mission, with a small nighttime follow up, against the Yawata steel factory in Japan, between July 29 and September 26, 1944. During the course of these raids, the proportion of B-29s airborne from Chengtu rose noticeably, a reflection of improving maintenance, and their bomb loads increased equally impressively, reflecting improving crew skills, but results from these more impressive raids failed to impress planners with the chances for the Twentieth to complete its coke, iron, and steel program soon enough to matter to the outcome of the war. Day and night strikes against Yawata on August 20 and 21 failed to inflict substantial damage and the daytime raid cost the Twentieth eleven B-29s destroyed, an unsustainable fifteen percent casualty rate. Each of the first two raids against Showa inflicted damage rated as “good” or “useful” at the time and subsequently revealed to have been slightly better than that, costing the Japanese Empire between one and six percent of a year’s coke and a small amount of pig iron production; the third strike encountered total overcast and the radar aimed bombings failed to inflict noticeable new damage.¹²⁶

Missions number five and six filled out the coke, iron, and steel phase of Operation Matterhorn, although both were flown to achieve ulterior objectives and neither touched directly upon the Japanese steel industry. Mission number five served the diplomatic end of satiating British pressure for action in Southeast Asia when fifty-four of fifty-nine aircraft staged to China Bay, Ceylon attacked the Pladjoe oil refinery in Palembang, Sumatra on the night of August 10, 1944. Thirty-nine B-29s bombed the refinery with one ton of bombs each and achieved what were believed, and turned out to be, minimal results, except that one B-29 failed to return to base. Several B-29s that

¹²⁶Kuzman, “Fuel and Bomb Loads,” *Summary and Evaluation*; Craven and Cate, *Matterhorn*, 105–118.

conducted a mine dropping mission into the river that provided oceanic access to the refinery achieved much greater results, sinking three and damaging four ships and closing the river to traffic for nearly a month. Mission number six brought twenty-four of twenty-nine airborne aircraft, four more lay broken at Chengtu, over Nagasaki on the night of August 11 in a test run of fire bombing techniques. Roughly three tons of bombs per aircraft failed to inflict much damage, two B-29s failed to return to base, and the results proved so inconclusive that the Committee of Operations Analysts continued to discuss the testing of firebombing techniques as if no test had yet been made a month later.¹²⁷

By the end of September 1944, the Army Air Force ended the Twentieth Bomber Command's attack upon Japan's coke ovens after total losses of thirty-five B-29s. The September 14 meeting of the Committee of Operations Analysts recognized the Twentieth's meager accomplishments and the essential uselessness of continuing the effort, to which observations the Joint Chiefs of Staff responded by canceling the coke, iron, and steel phase of Operation Matterhorn after the failed Anshan III raid on September 26. Given the apparent, and actual, lack of success that the Twentieth achieved in attempting to bomb Japanese coke ovens and recognizing that if the operation became more successful then the Japanese might simply overrun the Chinese capital at Chungking and the American air hub at Kunming, even if they chose not to march vastly further to seize the Chengtu airfields, the Joint Chiefs decided that the Twentieth should begin bombing targets of more direct interest to the fighting fronts while awaiting transfer to better bases. The Joint Chiefs directed the second phase of Matterhorn

¹²⁷Kuzman, "Fuel and Bomb Loads;" *Summary and Evaluation*; Hall, *Case Studies*, 343; Craven and Cate, *Matterhorn*, 105–118; *Meeting of COA, 14 September 1944*.

predominantly against Japanese aircraft strength and against lines of communication in an effort to disrupt the Japanese military in the field.¹²⁸

The Twentieth Bomber Command conducted its last thirty-five missions between October 1944 and March 1945 as it shifted targets and began to move itself back out of China. Contrary to assessments at the time, the Twentieth achieved its most useful strategic results during four, major, numbered and several smaller, unnumbered mine dropping missions against ports and rivers across Southeast and East Asia; this mining sank or damaged numerous ships and disrupted Japanese shipping and war production. Complementing these efforts, several major and numerous minor strikes against port and dockyard facilities in China, Taiwan, and Indochina damaged or sank several ships and further disrupted Japanese shipping, war production, and naval vessel repair. Of larger note at the time but of lesser actual strategic value, the Twentieth repeatedly visited aircraft factories at Omura on Kyushu; Mukden, Manchuria; and Okayama, Taiwan, effectively destroying the never completed Omura plant, totally destroying the Okayama plant in conjunction with strikes by naval aircraft, and inflicting heavy damage on both the Mukden aircraft plant and an adjoining arsenal. As Allied operations in the Philippine Islands began and intensified, and after the Twentieth gave up its truly strategic efforts, numerous strikes by the Twentieth against airfields and aircraft depots in China and Taiwan provided operational support for Allied forces struggling to overcome massive air and kamikaze attacks in the Philippine Islands campaigns. The Twentieth rounded out its efforts by bombing rail yards and a bridge in Burma and Thailand and by joining the Fourteenth Air Force in conducting the first successful fire bombing of the war in Asia to destroy nearly half of Hankow, a large, port city and component of the Wuhan

¹²⁸Craven and Cate, *Matterhorn*, 119–132; XX Bomber Command, “Evacuation Plan.”

conurbation in central China, in an effort to slow the Ichigo offensive in China and aid Allied offensives in Burma.¹²⁹

The Twentieth Bomber Command failed to successfully carry out the mission outlined for it in Operation Matterhorn. The Twentieth could not hope to sustain a meaningful effort against the Japanese home islands and failed in the only slightly less impossible task of destroying accessible Japanese coke ovens. Lack of logistical support and insufficient training of the Twentieth's air and ground crews doomed Matterhorn to failure, and poor intelligence added to the difficulties faced by the Twentieth. The Twentieth spent a vast majority of its flight hours wearing out its aircraft conducting inefficient supply missions and achieved significant proficiency, through expensive on the job training, only late in the operation, long after failing to achieve its strategic goals. Photographic reconnaissance, when the Twentieth could provide it, misled planners to underrate the already anemic results that the Twentieth achieved and to call off the coke, iron, and steel phase of the operation earlier than might have otherwise been the case, actually saving the Twentieth further effort in a hopeless cause and allowing other targets to be hit in the place of further missions to Yawata and Anshan.

Poor maintenance crew training kept the Twentieth Bomber Command's B-29s on the ground for long, but steadily shrinking, periods of time between missions, but it was poor aircrew training that drove the stake through the heart of Operation Matterhorn.

¹²⁹Kuzman, "Fuel and Bomb Loads;" "XX Bomber Command Consolidated Mission Statistical Summary," RG 18, Sk 190, R 60, C 10, Sf 7, B 149, National Archives; *Summary and Evaluation*; "Report of Mining;" Moorer, *Interrogation*; Minami, *Interrogation*; Hulin, letter to American Mission; Joint Target Group, *Strategic Mining*; Prestin, *October*; Prestin, *November*; Prestin, *December*; Craven and Cate, *Matterhorn*, 118–225; Fearing, "Battle of Burma;" COL George R. Fearing, Jr., Annotated Photograph of Hankow, RG 18, Sk 190, R 55, C 33, Sf 4, B 300, National Archives; George R. Fearing, Jr., "Memorandum for Chief of Staff, Twentieth Air Force," RG 18, Sk 190, R 55, C 33, Sf 4, B 300, National Archives.

Aircrew proved unable to operate their aircraft at anything approaching the aircraft's planned capabilities—a defect that only slowly improved between long maintenance lulls as the crews honed their skills by flying dangerous combat sorties and grueling cargo missions. Ill-trained crews consumed too much fuel during their operations not only because of simple, technical misunderstandings but also because they frequently made errors in navigation and had serious difficulty assembling into and maintaining formation. Poor fuel management necessarily resulted in reduced bomb loads and the inability to assemble into formations reduced the footprint left by the formation's bombs even further, thus reducing a formation's chances to hit its target at all, if it could even find the target area. These factors conspired to make the Twentieth miss its targets more often than anyone believed possible and, when hitting the target area, to still inflict relatively little damage. These problems in daylight flying skill areas combined with the Twentieth's inadequate gunnery training and led planners to decide to send the Twentieth on a number of night missions.¹³⁰

On night missions, the Twentieth Bomber Command proved even less effective than it did during the day. B-29s flew either singly or in very small groups at night because the Japanese Empire possessed relatively few night fighter aircraft, formation flying at night could be disastrous and would certainly be difficult, and flying alone allowed greater bomb and smaller fuel loads because each aircraft proceeded without regard to the behavior of any or many fellow aircraft. Given that solo bombing theoretically places each bomber's load in the exact center of the aiming area, bombing

¹³⁰Hansell, *Against Japan*, 165–7; *Summary and Evaluation*; Youden, "Formations;" "Consolidated Mission Summary;" Twentieth Air Force, "Visual Bombing;" Miser, "Proportion;" Kuzman, "Fuel and Bomb Loads."

accuracy might be expected to improve at night, but when inexperienced crews often failed to find their target areas, and then aimed using radars with which they initially lacked noticeable training, theoretical accuracy became unattainable. The small bomb footprint resulting from tiny nighttime formations and the inability to accurately aim using radar made the Twentieth's accuracy at night even worse than its accuracy during the day.¹³¹

Although Operation Matterhorn proved a failure, the Twentieth Bomber Command's attacks did damage the Japanese steel and merchant shipping industries. Three raids against Yawata inflicted little useful damage, but three larger raids against Anshan cost the Japanese between one and six percent of the empire's total, annual, steel production by destroying several batteries of coke ovens; the Japanese could have restored production levels, but only by diverting merchant shipping away from more pressing duties to carrying coal from Manchuria to Japan. The Twentieth added to that problem too, by destroying and delaying shipping through mining and bombing ports. Counterfactually, however, if the Twentieth had managed to overcome its training and maintenance problems and to become a serious threat to Japan, then Matterhorn would still have failed; the Japanese Imperial Army could conduct ground raids against Chengtu or simple ground conquest of Kunming and Chungking, to complement or replace aerial raids that could themselves have been increased in intensity.¹³²

¹³¹Twentieth Bomber Command, "Chengtu;" Hansell, *Against Japan*, 165–7; *Summary and Evaluation*; Youden, "Formations;" "Consolidated Mission Summary;" Miser, "Proportion;" Kuzman, "Fuel and Bomb Loads."

¹³²D'Olier, *Summary Report*, 66–67; Study Plans for Penetration Raids on Allied Airbases at Chengtu, Chungking, Liangshan, Kunming, RG 493, Sk 290, R 42, C 30, Sf 3–6, B 23, National Archives; Prestin, *January*.

The Twentieth Bomber Command contributed to Allied victory in World War II predominantly by helping to solve two of the problems that bedeviled the Twentieth throughout its career: intelligence and training. The Twentieth began operating over Japan and Manchuria using predominantly outdated intelligence of insufficient scope and suffered accordingly, but helped to solve the problem by using photographic B-29s, at first strictly ad hoc creations and later the dedicated F-13 variant, to provide Allied planners with massive quantities of their first aerial photographs of Japanese installations and activities across a huge swath of eastern Asia. The Twentieth also discovered how to fly and maintain a new and powerful type of aircraft, riddled with teething pains, that eventually laid waste to much of Japan when it came into more intensified use from island bases closer to that country than the Twentieth ever based.¹³³

¹³³Prestin, *August*; Prestin, *September*; Prestin, *October*; Prestin, *November*; Prestin, *December*; Prestin, *January*; CPT Roy Steele, *Headquarters, 2nd AAF Combat Camera Unit, Unit History, 3 MAY 1945*, in microfilm A7760 (Maxwell AFB, AL: Air Force Historical Research Agency); *Tenth Photographic Technical Unit, March 1945 History*, in microfilm A7760 (Maxwell AFB, AL: Air Force Historical Research Agency); *April History, Tenth Photographic Technical Unit*, in microfilm A7760 (Maxwell AFB, AL: Air Force Historical Research Agency); 1LT Raymond King, *946th Engineer Aviation Topographic Company, Unit Historical Report, Reports for March, 1945*, in microfilm A7760 (Maxwell AFB, AL: Air Force Historical Research Agency); 1LT Raymond King, *946th Engineer Aviation Topographic Company, Unit Historical Report, Reports for April, 1945*, in microfilm A7760 (Maxwell AFB, AL: Air Force Historical Research Agency).

CHAPTER 7

ONE AIR FORCE, TWO CONTRADICTIONS

In hindsight, the Fourteenth Air Force's offensive operations in 1945 appear to be little more than the continuation of an old policy, carried forward by inertia and executed by the Fourteenth's increasingly numerous and wide-ranging squadrons. In fact, however, in 1945 the Fourteenth acted in accordance first with its own ideas of how best to hurt the Japanese and later with Lieutenant General Wedemeyer's Beta plan, as okayed by Generalissimo Chiang, on a twice contradictory mission to sever the lines of communications that connected Japanese forces in southern China with Shanghai and the northern China ports and with Manchuria. This portion of the Beta plan aimed to inhibit Japanese economic exploitation of China and to weaken Japanese forces in southern China by reducing their logistical support, essentially by destroying every accessible rail car and riverboat in occupied China. Overall, the Beta plan aimed to drive a Chinese army to the coast and either seize a port or reoccupy an abandoned port as the Japanese withdrew, essentially voluntarily but under pressure, from southern China. That the Fourteenth, rather than encouraging Japanese departure by bombing supply dumps and barracks and fielded troops, actually worked to prevent Japanese withdrawal by destroying the means of their departure, serves as the first contradiction of the Fourteenth's efforts in 1945. That one of the geo-strategic goals of the United States effort in China, to help to establish a strong, non-communist, Chinese regime for the post-war world, was actively undermined by the destruction of the infrastructure of a China about to be freed of enemy occupation in military activities designed to serve a

merely operational goal, serves as the second contradiction of the Fourteenth's efforts in 1945.¹³⁴

By 1945, Japanese exports from occupied China, outside of Manchuria, virtually ceased. United States' intelligence reports correctly indicated that Japan moved virtually no economic traffic on rail lines south of the Yangtze River and only barely more on rail lines between the Yangtze and Pe-p'ing (Beijing). Traffic leaving the Yangtze River valley often went by river vessel along that watery highway but Fourteenth Air Force interdiction reduced the amount of traffic by ninety-two percent between early 1943 and 1945. By 1945, the Japanese only conducted systematic economic activity in China beyond the reach of the Fourteenth, in Manchuria and far northeastern China. To begin economic exploitation of southern China, or to renew it in the Yangtze valley, the Japanese would have had to install occupation mechanisms in southern China to enable that exploitation and give up the troop withdrawals that both the Japanese and the Allies planned on having occur; either would give the Fourteenth ample warning to renew interdiction before substantial economic advantage could accrue. Before beginning its interdiction campaign, the Fourteenth had already essentially eliminated the possibility of achieving any economic objectives.¹³⁵

¹³⁴MG Claire Chennault, letter to GA Henry Arnold, January 20, 1945, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); MG Claire Chennault, letter to GA Henry Arnold, February 26, 1945, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); MG Claire Chennault, letter to GA Henry Arnold, May 10, 1945, in microfilm 43836 (Colorado Springs, CO: United States Air Force Academy); Romanus and Sunderland, *Time Runs Out*, 330–67; "Asia Transportation Map, Main LOC Route, CACW Area," RG 493, Sk 290, R 42, C 30, Sf 3–6, B 28, National Archives; "Asia Transportation Map, Targets 68th Wing," RG 493, Sk 290, R 42, C 30, Sf 3–6, B 28, National Archives; "Asia Transportation Map, New Plan Target," RG 493, Sk 290, R 42, C 30, Sf 3–6, B 28, National Archives; "Pei-p'ing (Peking) China," RG 493, Sk 290, R 42, C 30, Sf 3–6, B 28, National Archives; Air Section, Combat Intelligence Office, "Special Report No. 7, Targets for Interruption of Traffic on Rail L.O.C. in North China," RG 493, Sk 290, R 42, C 30, Sf 3–6, B 28, National Archives.

¹³⁵"Sunderland-Perry," Office of Strategic Services, *Occupied China Railroads North of the Yangtze*.

Whatever the value of China's railroads to the Japanese economy, the Japanese Imperial Army valued them rather highly as the only means by which to operate forces in northern China and extricate forces from southern China. Japanese forces in China drew approximately eighty percent of their required food and general supplies from local sources and much of their ordnance from captured Chinese stockpiles, but the remainder of the logistical support required by Japanese forces in China, together with virtually all of the strictly military supplies for forces in Southeast Asia, flowed across China's railroads by spring 1945. Japanese plans called for a withdrawal from southern China, the formation of static fronts along the Yangtze and facing the Soviet Union in Manchuria, a strong, static, coastal defense of Korea and North China, and a strong mobile force to back up the static forces; the railroads remained the only source of strategic mobility for Japanese forces on mainland Asia to move to their new deployment areas, as the Beta planners hoped they would. The Japanese Army depended upon having operable Chinese railroads in order to shift forces to counter Allied landings along the China coast, to move forces between the China front, the coast, and Manchuria, and to transfer forces from southern China to the north; the Allies depended upon the Japanese having the ability to leave southern China, which ability only the railroad could provide.¹³⁶

Besides premising the Beta plan on the expected Japanese withdrawal from southern China, other diplomatic and military reasons existed for wanting the Japanese to withdraw unimpeded from the region. The western Allies pleaded repeatedly throughout the war with Premier Joseph Stalin to bring the Soviet Union into the war against Japan, to be met repeatedly with Stalin's promise that the Soviet Union would indeed attack

¹³⁶“Sunderland-Perry,” “Operational Concept of the Imp. GHQ,” “Directions for the Period Between February and May 1945.”

Japan shortly after achieving victory in Europe. Stalin's promises could have been taken with caution, but Soviet expansionism in Finland, the Baltic States, Poland, and Rumania, historical Russian interest in Manchuria, and Russo-Japanese rivalry in the Far East gave good cause to take Stalin at his word on this topic. Given the ability of the Red Army to defeat Japanese Imperial Army repeatedly on their mutual frontier during the late-1930s and the amazingly powerful forces that the Red Army built up to destroy the Wermacht, itself a far better equipped force than the Japanese Imperial Army, there could be no question of the outcome of any struggle between the opposing forces in Manchuria. Allowing Japanese forces to leave would even have followed Sun Tzu's dictums of never thwarting an enemy returning home and always leaving an escape route for a surrounded enemy, arguments that might have appealed especially to Generalissimo Chiang, himself a product of China's famous Wampoa military academy. Even given the apparent reputation of the Kwantung Army as being Japan's best, a reputation not apparently earned by any particular martial deeds, the United States and Chinese governments should have been happy to see Japanese forces moving toward Manchuria.¹³⁷

The year 1945 dawned as both the Allied offensive in Burma and the Japanese Ichigo offensive in China ground to a halt. On the Salween River front, facing south toward Burma, the Chinese concluded their first successful major offensive in recent memory in January 1945 and began to transfer troops from there toward the main front in southeastern China while the Chinese Army in India and other Allied forces continued to grind eastward into Japanese lines. Japanese forces, meanwhile, drove the suddenly

¹³⁷Burns, *Roosevelt*, 573–7; Drea, *Nomonhan*, passim; “Operational Concept of the Imp. GHQ,” “Directions for the Period Between February and May 1945,” Sun Tzu, *The Art of War*, trans. Samuel B. Griffith (New York: Oxford University, 1971), 109.

uncooperative French out of northern Indochina and briefly connected that portion of their empire with Japanese controlled territory in southern China, before abandoning the connection due to changed strategic guidance and ending Ichigo. Japanese forces did not rest, however, as two smaller offensives in South China succeeded Ichigo and continued the destruction of the Fourteenth Air Force's bases in the area in a process that finally ended in May, as Chinese resistance stiffened and Japanese forces turned back from further conquest.¹³⁸

As Ichigo died away, the Fourteenth Air Force turned its attention away from close air support and battlefield interdiction and immediately launched into its China-wide interdiction campaign. Throughout late-1944, the Fourteenth retained a generally constant strength; in November of that year the Fourteenth deployed nearly four hundred fighters, nearly one hundred medium bombers, nearly fifty heavy bombers, and perhaps three dozens reconnaissance aircraft. While the overall number of American troops in the China Theater increased dramatically beginning in 1945, the Fourteenth actually grew very little until units of the Tenth Air Force began to move into China as the war was ending in summer 1945. The Fourteenth did, however, receive steadily more up-to-date models of aircraft and increased its combat power and range as a result. Tonnage also flowed over the Himalayan Mountains in dramatically increasing tonnage in 1945, as larger transport aircraft such as the C-54 replaced smaller ones such as the C-47, as the clearing of North Burma allowed the Ledo Road to open, for a more efficient transit of heavy equipment, and transport aircraft to fly a safer and lower altitude route through the

¹³⁸Romanus and Sunderland, *Time Runs Out*, 135, 262–90.

Himalayas, and as pipelines laid along the road supplied fuel without regard to weather or traffic jams.¹³⁹

Within China, another change took place in the late spring of 1945: the American program to train and equip Chinese divisions finally began to bear fruit and Lieutenant General Wedemeyer, whose personal manner failed to irritate Generalissimo Chiang where General Stilwell's prickliness had infuriated him, finally managed to gain some useful power to influence the Chinese Army. A spearhead composed of two divisions of the excellent Chinese Army in India, flown into China at great expense in order to save the city and air hub of Kweilin from the Ichigo offensive, led eleven other Chinese divisions, which had recently completed a three month training course and received a useful amount of American equipment, in an offensive toward Canton. These Chinese divisions marched and fought without suffering from the usual malnutrition that left a trail of corpses behind the average Chinese formation on the march because Wedemeyer's staff coordinated the purchase and distribution of food for these units without interference by Chinese commanders. The system worked; the troops gained weight and stamina, morale increased along with combat effectiveness, and the troops came victorious out of a skirmish against a Japanese rear guard. Then the Twentieth Air Force dropped atomic bombs on Hiroshima and Nagasaki and Soviet forces overran Manchuria in a matter of days, smashing the vaunted Kwantung Army. The Chinese offensive halted to find out what it all meant and never resumed. Japan surrendered a month before Chinese forces would have captured the undefended port of Fort Bayard

¹³⁹Ibid, 25, 170–9; Maurer, *Air Force Combat Units*, passim; Miller, "Air Logistics."

and opened a direct line of supply into China from the United States for the first time since 1938.¹⁴⁰

¹⁴⁰Romanus and Sunderland, *Time Runs Out*, 330–96.

CHAPTER 8

UPDATING THE DISCUSSION

The historiography of the United States war effort in China during World War II began in 1942, using glowing reports of the activities of the “Flying Tigers” American Volunteer Group, to raise morale in the United States when Allied forces in every other theater of war seemed to be undergoing a series of disasters. During the fifty-five years following the ending of World War II, historiography of the American aerial effort in China broadened to include limited discussions about the Twentieth Bomber Command and the later tactical activities of forces under the command of Major General Chennault. The Wesley Craven and James Cate series *The Army Air Forces in World War II* even includes a sort of dry review of the accomplishments of the Fourteenth Air Force after the end of Operations Ichigo and Matterhorn. Beyond these limited areas of coverage, historical discussion is essentially non-existent. Overall, historical coverage of and debate over the American aerial effort in China during World War II is topically limited and lacking in depth.

The American Volunteer Group episode is by far the most written about aspect of the American air war in China. Robert Scott’s famous *God is my co-pilot* arrived in 1943, followed by *Flying Tiger: Chennault of China* in 1959, and a series of similar, popular, tactical and personality oriented works has continued to be published ever since the war, highlighted by Major General Chennault’s own *Way of a fighter; the memoirs of Claire Lee Chennault* in 1949. This string of books often emphasizes a degree of hero worship and an unquestioning acceptance that air power is of utmost importance in war while

glossing over the logistical and strategic issues that framed the decisions that resulted in the events covered: these books are, in essence, popular history. Such works as Daniel Ford's *Flying Tigers: Claire Chennault and the American Volunteer Group* provide a more balanced coverage of both the events within the air campaign in China and, more importantly, of the trade-offs and decisions that made those events possible. Given the historical situation, it is difficult to argue with the assessment that the United States did what little it could early in the war in order to help China and hinder the Japanese; little more could have been done, especially involving ground forces, and the morale and military value of China clearly outweighed what a couple of hundred of obsolescent aircraft could have achieved elsewhere in the world.¹⁴¹

The history of the Fourteenth Air Force during 1943 and 1944 is less written about than is the earlier period. Some admirers of Major General Chennault continued their popular histories into this period, finding support from A.B. Feuer's *General Chennault's secret weapon: the B-24 in China: based on the diary and notes of Captain Elmer E. Haynes*; Barbara Tuchman's *Stilwell and the American Experience in China, 1911–45* counters their attacks on General Stilwell by pointing out that while Chennault's plans failed, the Chinese never allowed Stilwell to attempt to execute his plans for the Chinese Army. Michael Schaller presents a more balanced view of the dispute in *The U.S. Crusade in China, 1938–1945* as he proves that while Chennault's plans failed, the Kuomintang had no intention of even allowing Stilwell to attempt reform in China. After the translation and release of captured Japanese plans, no one disputes that Ichigo aimed

¹⁴¹Robert Scott, *God is my co-pilot* (New York: Scribner, 1943), passim; Robert Scott, *Flying Tiger: Chennault of China* (Garden City, NY: Doubleday, 1959), passim; MG Claire Chennault, *Way of a fighter; the memoirs of Claire Lee Chennault* (New York: G.P. Putnam's Sons, 1949), passim; Daniel Ford, *Flying Tigers: Claire Chennault and the American Volunteer Group* (Washington: Smithsonian Institution Press, 1991), passim.

primarily to drive the Fourteenth out of southern China. The larger strategic situation is the missing link in the historiography of the Fourteenth Air Force's growth and early employment. No previous author discusses the fact that the assets, especially the B-24s, deployed to build the China Air Task Force into the Fourteenth failed to achieve, indeed could hardly have achieved, the strategic mission of aiding China, but could have usefully served elsewhere. In early and mid-1942, a crisis in the more important North African Theater siphoned all excess strength away from the Tenth Air Force in China-Burma-India, but perhaps because of inter-service rivalry, the same recognition of priorities did not manifest itself in the face of the even more critical Battle of the Atlantic.¹⁴²

Given that the atomic age began with B-29s over Japan, it is no surprise that the history of the Twentieth Bomber Command is widely covered, but given that the Twenty-first Bomber Command, rather than the Twentieth, conducted essentially all of the bombing of Japan, it is equally unsurprising that the Twentieth is generally covered only in the sketchiest of detail by most sources. Every source, from the American official history to the newest works, such as Richard Frank's *Downfall: the end of the Imperial Japanese empire*, E. Bartlett Kerr's *Flames over Tokyo: the U.S. Army Air Force's incendiary campaign against Japan, 1944–45*, and Kenneth Werrell's *Blankets of Fire: U.S. bombers over Japan during World War II*, seems to agree upon the major themes. The common argument says Twentieth went to China to help Generalissimo Chiang, that it attempted to bomb what was arguably the best available strategic target, and that the

¹⁴²Elmer E. Haynes, *General Chennault's Secret Weapon: the B-24 in China: Based on the Diary and Notes of Captain Elmer E. Haynes*, edited by A.B. Feuer (Westport, CN: Praeger, 1992), passim; Tuchman, *Stilwell*, passim; Schaller, *Crusade*; passim.

failure of Operation Matterhorn was not inevitable. Further, the failed operation was so small that no change would have improved the outcome noticeably, and the Twentieth did manage two important tasks: to gather photographic intelligence and to break-in a new weapons system.¹⁴³

The common argument is wrong; the Twentieth could and should have achieved greater results and the reasons that it did not do so are not quite those that are commonly accepted. A squadron force of photographic B-29s based in China could have provided better coverage of larger areas with less effort, while the remaining fifteen squadrons of B-29s could have shaken down more quickly and conducted more missions against the more important shipping target from either India, Australia, or both than they did from their India-China bases. Poor training, inadequate logistical support, lack of time before winter, and plans to deploy the Twentieth Bomber Command from China and India to the Mariana Islands in early 1945 doomed Operation Matterhorn to near certain failure. The Army Air Force's own bombing accuracy predictions, when cross indexed with the known abilities of the flight crews and ranges to the targets, clearly show that the Twentieth required extensive additional training, a fact already obvious in early 1944 or before, which it could not hope to quickly conduct while flying logistical missions. Without the requisite additional training, the Twentieth could not expect to consistently damage its very small coke oven targets, but could still have conducted successful mine dropping, and to a lesser extent port bombing, missions. The Army Air Force recommended the commitment of the B-29s to an advanced base in China and primarily

¹⁴³Kenneth Werrell, *Blankets of Fire: U.S. Bombers over Japan during World War II* (Washington, DC: Smithsonian Institution Press, 1996), passim; E. Bartlett Kerr, *Flames over Tokyo: the U.S. Army Air Force's incendiary campaign against Japan, 1944–45* (New York: D.I. Fine, 1991), passim; Richard Frank, *Downfall: The End of the Imperial Japanese Empire* (New York: Random House, 1999), passim.

against the Japanese steel industry both in order to begin a strategic bombing campaign the result of which could be the establishment of a separate Air Force in the United States and to arrange a command structure that excluded, to the maximum possible extent, Army ground forces officers and foreign officials, while allowing General Arnold his first opportunity to command a combat unit. President Roosevelt accepted the recommendation because he believed that sending the force to China would somehow aid Chiang and encourage him to allow his country or his military to be reformed or employed in the future, in accordance with Roosevelt's desire to have China as an American ally in the Far East after the war.

Historical studies of the strategic aspects of China Theater air activities after the Twentieth Bomber Command's exit from the scene simply do not exist. Perhaps because Japanese aerial forces essentially vanish from the scene at the same time, those works that mention the topic at all are little more than listings of aircraft employed and ground targets attacked, without any strategic reasoning behind the operations, as if the Fourteenth Air Force had always attacked the Japanese and simply continued to do so out of habit. In fact, the Fourteenth conducted operations in 1945 in pursuit of what it deemed strategic objectives, the isolation and immobilization of Japanese forces in southern China, and a deep flaw underlay the whole concept of the Fourteenth's plan. Lieutenant General Wedemeyer and Generalissimo Chiang's Beta plan called for Chinese ground forces to move toward the coast beginning in summer 1945, to open a port through which to supply a larger training effort and a final drive to victory. The Beta plan spoke of attacking the Japanese but acknowledged that Chinese forces possessed no ability to force a Japanese retreat; the attack could only encourage and hasten the

expected Japanese withdrawal. The Fourteenth's activities in 1945 rather hindered than aided the Allied cause, both in the immediate conflict and in the later peace.

CHAPTER 9
THE FOURTEENTH AND THE TWENTIETH
FOR THE TWENTY-FIRST CENTURY

During the autumn of 1995, the North Atlantic Treaty Organization waged war against the Serbian portion of Bosnia-Herzegovina, and except for occasional artillery barrages and targeting assistance by friendly ground forces based in Muslim portions of the country, used exclusively aircraft to conduct combat operations. During this conflict, the Atlantic powers carefully avoided actions that might have damaged Bosnian infrastructure but ravaged Serbian supply dumps and pounded fielded Serbian forces; Bosnia as a whole, including the Serbs, could not easily do without the former target set while the Serbs could not wage successful war without, and could not replace, the latter targets. The Atlantic powers intended to create Bosnia as an independent state and the intact infrastructure of the country played a critical role in the potential achievement of that national goal whereas Serbian forces and military supplies impeded the accomplishment of the goal by their very existence. Two of the lessons of air power in the China Theater during World War II thus manifest themselves during that Bosnian conflict: attack what must be destroyed in order to win and do not attack targets, the destruction of which will impede the achievement of national goals.¹⁴⁴

Numerous lessons can be drawn from American aerial activities in the China Theater during World War II. In addition to the above lessons about targeting, Operation Matterhorn teaches that little can be achieved by attacking targets that are both very

¹⁴⁴Mark Conversino, "The Changed Nature of Strategic Air Attack," *Parameters* 27, no. 4 (Winter 1997–98): 28–41.

difficult to hit and that require more hits to destroy than the attacking force could reasonably expect to achieve over the course of its operations. The China experience also teaches the necessity of being willing and able to sustain operations for long enough to achieve objectives. Security plays an important role in an operation and threats can come in a variety of unexpected shapes and sizes, as experience from China demonstrates. Technology, though a gateway to greater achievement, is also a stern master that experience from China teaches us will demand training if the equipment is to work correctly and contingency plans for when the equipment does not fulfill expectations. The most important lessons taught by the American aerial experience in China, however, has nothing to do with tactics or technology: actions must be taken in pursuit of national goals, with military strategy, inter-service politics, and individual gain relegated to places of dramatically lesser importance.

Any operation, whether full scale war, covert conflict, blockade, economic subversion, military support for a party to a conflict, or any other active foreign policy must be sustainable for long enough, including a margin for error, to achieve its objectives. The operation must be able to continue regardless of plausible environmental events, such as a seasonal monsoon season or the initiation of active civil war or governmental change in an unstable or democratic host country and the operation must not cause such diplomatic difficulty with other countries that national policy implementation is unduly inhibited in other areas. At a lower level, the operation must enjoy adequate logistical support, including both overall stocks and transportation to areas of usage, to carry the operation through to conclusion. American aerial operations in China clearly failed to meet several of these criteria, most notably that of logistical

support and reliance upon an unstable host country in China. In the future, whether support structures located in nominally friendly countries will remain available for use in the face of terrorist attack, diplomatic or religious pressure, or popular revolution may be uncertain and plans must account for all possibilities. For the United States and other countries with intercontinental force projection capability, the question might also arise whether the ability to project force with intercontinental bombers, aircraft carriers with limited ordnance stowage, or not readily replaceable cruise missiles will be sufficient if events do or might warrant activity over a period of weeks, as a sustained bombardment of Iraq in the post-Desert Storm era might require; the same question may arise for less capable countries such as the People's Republic of China involved in, for instance, maritime sovereignty operations in the Spratley Islands if the only available tools are small surface combatants and short ranged fighter aircraft.

Any operation must be provided with security measures sufficient to counter, withstand, or evade plausible opposing activity directed against it. Opposing activities might include sabotage, terrorist attack, raids by irregular or elite forces, ground or airmobile attack, air or missile bombardment, blockade, attack using unconventional weapons, or any of a host of other possibilities, each of which must be accounted for in planning. Security cannot be relaxed simply because a base is located in a nominally neutral or geographically discontinuous state, though some security measures might be subject to diplomatic considerations in such a situation. American aerial operations in China during World War II underwent significant trauma due to insecurity and might have experienced further trauma had the Japanese conducted ground force raids against the Chengtu complex or advanced their armies to Kunming or Chungking. In the future,

incidents such as the bombing of the USS Cole in neutral Aden in 2000 or the continuous raids and ambushes conducted by Chechen irregulars against Russian security forces in the Caucasus throughout the 1990s will continue to threaten every sort of operation, from border patrol to sanctions enforcement and of course including active combat activities.

Every operation relies on some form of technology and that technology must be maintained and its users properly trained in order for the operation to succeed. Maintenance crews must be able to service equipment not simply in a classroom or training environment but also in the face of casualties, logistical shortages, lack of infrastructure, and poor working conditions. Operators must be trained to conduct operations using both the full capabilities of the equipment in all plausible conditions and limited capabilities in case of equipment damage or failure. Equipment that is especially prone to failure, such as engines on a B-29, must be especially well provided for both in training and in logistical support. The Twentieth Bomber Command's failure to even approach success in Operation Matterhorn is most explicitly due to training and technology difficulties, but early in the war the China Air Task Force and Fourteenth Air Force suffered similar problems in China during World War II. In the future, each time a new ship or a new type of aircraft or missile or even something as simple as a new model of truck is introduced, its crews will require special and possibly lengthy training before being able to operate the technology to full capability. This proviso applies both to technologically advanced countries, such as with the 2000s French deployment of advanced Rafale fighters on a brand-new aircraft carrier and to less technologically reputable states such as Iran with its 1990s acquisition of complex and capable Kilo class

submarines from Russia; neither could expect to master and effectively employ such weapons without extensive training.

In any operation, the national interest must be the primary factor that influences what is done where and by whom. Military strategy must serve national goals and military operations and tactics must not work against national goals, even if any resulting restrictions cost time, treasure, or lives. This axiom must, however, be tempered by reality: if a national goal is difficult to the point of impossibility to achieve, then strategists must persuade national leaders to change the national goals. In any case, the political advancement of a particular person or branch of government must not be confused as being directly in the national interest.

The American aerial effort in China during World War II fell into two conflicts between national interest and military or political advantage. The Twentieth Bomber Command experienced failure partly because Army Air Force leaders desired to retain maximum control over the force and intentionally deployed it to bases from which it could not reasonably be expected to substantially advance the national interest but where the force would be shielded from Army, Navy, and foreign influence to the maximum possible extent. The Fourteenth Air Force later conducted operations against the infrastructure of occupied China that materially inhibited the Chinese government's reoccupation and reconstruction of southern and eastern China and thus weakened the Kuomintang, the American backed faction within China, in the civil war that seemed likely to be about to ensue. The Fourteenth conducted those operations in pursuit of the military goal of isolating and immobilizing Japanese forces in southern China, a military

strategic goal that, even had it been wise, should still have carried less weight in planning than the national goal of strengthening the Kuomintang-dominated Chinese government. The Fourteenth undoubtedly suffered fewer casualties in its tactical activities against undefended bridges and ill-defended trains and riverboats than it would have suffered if it had concentrated its efforts upon well-defended supply dumps and encamped troops, but that saving of lives does nothing to mitigate the fact that the actions were counterproductive, or at least less productive, to the achievement of national goals, than the alternative would have been.

In the future, national goals will probably remain as difficult to disentangle from military strategy and power politics as they have been in the past. As always, the wise selection of leaders provides the best insurance that activities will occur in pursuit of national goals, but exceptions and perceptions will color every event, regardless of governmental system or the intensity of patriotism of involved actors. Whether paramilitary Interior Ministry troops will coordinate well with Russian Army troops in Chechnya in the 2000s probably depends as much upon the relative power and ambitions of their ministerial leaders in Moscow as upon the military need to coordinate movements in pursuit of the national goal of pacifying Chechnya, though both forces probably desire to achieve that end. Likewise, whether a given military commander in Congo will rebel or fight against rebels, traffic in diamonds or take only governmental largesse, will probably depend as much upon his personal view of what is good for him and his country as what his superiors order him to do.

CHAPTER 10

MISGUIDED, POORLY PLANNED, ILL-AIMED

Before World War II expanded to include the United States as an active participant, the soon to be Allies used a formula for activity in China that fit the theater perfectly. British, French, and Soviet aid flowed to China in a stream that ebbed or flowed as the situations of the donor states dictated. That aid provided useful material support for the Chinese military and helped to ensure that the Kuomintang leadership would not make peace with Japan. The United States, in the meantime, provided significant support to China's military and economy and allowed China to recruit military personnel from the United States to form an aerial unit to support the morale of the Chinese populace. The policies of the United States and the Allies kept numerous Japanese forces tied down in China, decreased Japanese pressure on other Allied states, and kept China in the war and on the Allied side.

After 1941, despite the loss of land and sea connections to the Western world and an ending of Soviet aid to China, planners in the United States saw China as a potentially powerful postwar ally and as a base from which United States' air power could strike at the interior of Japan's empire. The proviso to that vision was that China had to be kept in the war until adequate air units became available and meanwhile built up into a stable power in its own right, in order for the vision to become reality. Reinforcements flowed from the United States to Brigadier General Chennault's China Air Task Force, and enabled him to brilliantly stave off the admittedly distracted Japanese and to keep China

fighting on the Allied side throughout 1942 and into early 1943. From that success came overconfidence and the beginnings of disaster for the Allied cause in China.

Throughout 1942 and into early 1943, the United States Army continued to pour aerial reinforcements into China, created the Fourteenth Air Force, and sent it on an operational mission that violated both the military principles of war and the Fourteenth's strategic mission of aiding China. In accordance with the Europe-first Allied grand strategy, the Allied ability to take substantive offensive action in several theaters but not in China, and the fact that no theater carried less strategic importance for the Allies than did China, all except a minimum of Allied combat aircraft should have massed elsewhere than with the China Air Task Force. The Task Force's structure, if maintained, sufficed for its economy of force mission in the face of weakening Japanese opposition. Given the imposing difficulty presented by communications to and within China and the proven inability of the Chinese Army to stop Japanese aggression, no offensive in or from China could hope to secure its bases or maintain any sort of initiative. The Japanese Imperial Army needed only march toward any airbase in China in order to gain the initiative by diverting the Fourteenth from offensive strikes to flying defensive support for Chinese ground forces, and then even that support might not suffice to save the airbase. The 1943 anti-shipping campaign violated the Fourteenth's strategic mission, its mission to protect China and keep it in the war, by stirring the Japanese to conduct an offensive so vast that it pushed the Fourteenth largely out of range of coastal shipping targets, threatened the existence of free China, and badly hurt both Chinese morale and the prestige of Chiang Kai-shek.

The Twentieth Bomber Command followed the Fourteenth Air Force into China and the planning and execution of Operation Matterhorn continued the Fourteenth's established practices of violating the principles of war and failing to contribute positively to aiding the Chinese. The Twentieth took its orders from General Arnold and the Joint Chiefs of Staff, rather than Generals Stilwell or Wedemeyer, the two Americans who sequentially supposedly commanded all American forces in China, Burma, and India, and as a result the efforts of the Twentieth frequently failed to unify with those of the Tenth and Fourteenth Air Forces. The Twentieth's strategic objective, the Japanese steel industry, did not serve as the target of any Allied effort with which the Twentieth could mass its efforts and even that objective attracted only five of the Twentieth's first nine missions, executed over four months, with an approximate average of only one combat mission per twelve days and only one mission against the primary target per twenty-three days. While it operated against the Japanese steel industry, the Twentieth likewise failed to mass its efforts against the Japanese merchant marine, the primary target of so many other Allied forces and the weakest link in the Japanese economic chain. Diplomatically and economically, though the Twentieth went to China in part to placate Generalissimo Chiang's desires for prestige and enrichment, it is difficult to conceive of any way in which the presence or activities of the Twentieth aided the Chinese people or government, except by adding huge sums of money to the already inflated Chinese economy.

After the bulk of the Twentieth Bomber Command left China and Operation Ichigo ran its course, Japanese forces receded from their far-flung conquests under the constant harassment of the Fourteenth Air Force. The Allied powers desired a Japanese

evacuation of southern China and Lieutenant General Wedemeyer's Beta plan depended upon the occurrence, but the Fourteenth unnecessarily attempted to prevent the process regardless. The Fourteenth waged its 1945 transportation campaign with only a few hundred, daytime operating aircraft over hundreds of thousands of square miles of territory, a force insufficient to prevent Japanese redeployment out of the area, but one which certainly destroyed numerous items of infrastructure, delayed the reassertion of Kuomintang control, and inhibited economic recovery in the formerly occupied zone. At the time, the Fourteenth's transportation campaign was obviously undesirable and insufficient, it proved to be unnecessary, and it once again inflicted unnecessary harm upon China and the Chinese rather than helping them, as the Fourteenth was supposed to do.

The air transport effort between India and China is a thread that runs throughout the story of World War II in China after 1941. To support Chennault and maintain at least a minimal contact with China, the Hump airlift over the Himalayan Mountains opened in early 1942. From a handful of small C-47s, the force that flew over the Hump grew steadily, eventually deploying hundreds of huge C-54s, C-46s, C-87s, and C-109s, besides smaller transports and, frequently but intermittently, squadrons of bombers. No airlift could carry the external commerce that the Chinese might have liked to conduct and no airlift could supply enough military equipment to maintain the huge Chinese military, but clearly the United States had to maintain some relatively unimpeded contact with China.

From 1942, the Himalayan airlift usefully served diplomatic and economic ends. Diplomats, emissaries, and military leaders from most of the world traveled the Hump if

they wished to conduct business with the Chinese. Chinese external commerce with the western Allies, to the extent that such existed, flowed outward across the Hump and provided the Allies with small quantities of useful materials. The airlift also carried vast quantities of both Chinese and foreign currency and undoubtedly some quantities of smuggled civilian goods into China; neither may have truly aided the Allied war effort, but Chinese leaders demanded them regardless. So much proved useful, but could have been carried by little more than a handful of aircraft.

Fueled by a demand from within China that constantly increased, the airlift over the Himalayan Mountains grew tremendously and wastefully. Each American serviceman in China required a slice of the airlift effort in order to supply him or her with what Americans considered to be a bare minimum of supplies, and when that bare minimum was not met, morale fell; the steady expansion in the number of Americans working in China caused a steadily growing drain on the tonnage moved across the Hump. Likewise, each additional or larger aircraft that the Fourteenth Air Force deployed in pursuit of its poorly conceived goals required additional transport aircraft be assigned to the Hump route, or some bombers spend their time ferrying supplies rather than fighting, in order to maintain the new arrival. The Twentieth Bomber Command fueled the same difficulty because it required more supplies than it itself delivered, even with the addition of transport aircraft sent to the area specifically to help in the Twentieth's effort. In effect, the Hump airlift proved to be a magnificent achievement that simply enlarged a vicious circle: supply never met demand but both grew larger despite a conspicuous lack of return on the effort invested.

The use of bombers as transports glared as example of the wastefulness on the Himalayan airlift. The 308TH Bombardment Group's B-24s served as transports for most of their flight hours in 1943, in order to support a few dozen anti-shipping sorties per month beginning in July 1943, while over the Atlantic Ocean B-24s flew daily but in inadequate numbers against German submarines that caused immense harm to Allied shipping and economic efforts. Later, the Twentieth Bomber Command's B-29s hauled supplies during the vast majority of their flight hours in order to conduct just a few actual combat missions per month. Beyond these uses of bombers as transports, the additional trouble of outright inefficiency was inescapable; bombers were not designed as transports. Bombers carried armor plating, guns and mounts, redundant systems, extra crew stations, and other equipment, the weight of which detracted from their ability to carry a maximum load into a non-combat situation; bombers also lacked a transport plane's larger access points and thus took longer to load and unload than would an equivalent tonnage on a transport plane.

Allied planners slowly came to realize that the Himalayan airlift consumed transport aircraft that would better have served elsewhere. Before the Fourteenth Air Force built up for its anti-shipping campaign in 1943 the airlift provided only a meager flow of supplies, barely sufficient to allow the skeleton China Air Task Force to fly its interception missions plus a few offensive sorties, and the usual diplomatic and economic traffic. Then, however, as war moved into Italy and later France and the Low Countries, the call for transport aircraft on the battle fronts in Europe grew dramatically and the ever growing number of aircraft that shuttled between India and China came to be seen as a waste. At the time of the recall crisis, when Generalissimo Chiang engineered the

replacement of General Stilwell with Lieutenant General Wedemeyer in hopes of finding a more pliable subordinate, General Marshall suggested to President Roosevelt that the President ought to respond sternly to Chiang's machinations partly because air transport assets that aided China could better have been employed in the Southwest Pacific Area, Italy, or the Netherlands. Despite this damning of the airlift, and the Chinese war effort in general, Roosevelt relieved Stilwell and gave in to Chiang; Roosevelt's belief in Chiang had disappeared but doing nothing and hoping for the best proved an easier course than abandoning an uncooperative ally, and the airlift continued to grow.¹⁴⁵

Besides being weak in its theoretical foundations and strategically questionable, the American air war in China during World War II suffered from a number of consistent, practical difficulties. Logistics posed the chief difficulty for American forces in China: that only limited tonnage could cross the Himalayan Mountains restricted the number of American soldiers who could serve in China and the number of sorties that Allied aircraft could fly from China. When the Fourteenth Air Force encountered these limits, some of its aircraft sat uselessly on the ground, others flew logistical missions and eased the limits, and few or none flew combat missions to hurt the enemy. When the Twentieth Bomber Command encountered logistical limits, its B-29s likewise flew logistical missions rather than combat missions, or they abandoned their primary targets in favor conducting of logistically sustainable operations from India against secondary targets. In either case, logistical difficulties delayed or impeded American air operations.

¹⁴⁵George Marshall, Draft letter for President Franklin Roosevelt to Generalissimo Chiang Kai-shek, reprinted in *Diplomatic History*, 4, no. 3 (Summer 1980); Burns, *Roosevelt*, 541–5; Romanus and Sunderland, *Command*, 361–471.

Maintenance training provided another obstacle to successful American air operations in China during World War II. Early in the war, with small quantities of numerous types of aircraft pressed into service, maintenance crews expectedly but inefficiently lacked the knowledge and equipment to properly maintain many aircraft. Later in the war, new types of aircraft, especially B-29s and C-46s, experienced numerous mechanical difficulties that no one had previously diagnosed and with which no one was prepared to deal. Such difficulties naturally resulted in destroyed, damaged, or grounded aircraft and consequent difficulties and delays in various activities.

Flight crew training proved to be a consistent and galling difficulty for the Twentieth Bomber Command and a lesser but notable difficulty for the Fourteenth Air Force. Crews who arrived in theater without adequate training occasionally died while crossing the Himalayan Mountains for the first time or proved unable to find either targets or home bases reliably, accurately attack targets, fly useful formations, or adjust their equipment to unfamiliar local operating conditions. When such deficiencies manifested themselves, in-theater training consumed scarce resources and required more time than would equal training in the United States. In any case, flight crew training deficiencies contributed to the failure of American efforts in China during World War II, and especially to the failure of the Twentieth Bomber Command to accomplish its theoretically achievable mission.¹⁴⁶

Security posed another problem for American aerial forces in China during World War II. The Chinese Army proved to be unable, and the United States Army unavailable, to prevent the Japanese Imperial Army's attacks against American airbases throughout

¹⁴⁶Tunner, *Hump*, 43–120; BG N. Longfellow, *Lessons Learned* in microfilm 43835 (Colorado Springs, CO: United States Air Force Academy, 1993).

southern and eastern China. Chinese and American security forces proved unable to prevent sabotage and signaling against the Twentieth Bomber Command's bases around Chengtu. American and Indian security forces proved unable to prevent pilferage of American supplies in India. Of these, only Japanese ground forces caused tremendous damage, but each incidence caused difficulties and delays in American operations.

In a 1938 letter, Major Harold McGinnis, one of then Brigadier General Arnold's top men in the Army Air Corps, who closely followed Arnold upward through the ranks throughout the war, discussed several pitfalls that might entrap future air forces and that ended up entrapping the United States Army Air Force in China during World War II. McGinnis warned against air forces attempting to operate from inadequately manned or improperly prepared airbases. McGinnis went on to state that only an adequate flow of supplies and trained personnel, that the combat forces needed only requisition and must absolutely not be involved in transporting or training, could sustain a continuously operational air campaign. The principles of war, according to McGinnis, applied to the operation of air forces as much as to ground forces, and had to be obeyed in order to achieve maximum utility from employed forces. Clearly, at least one influential member of the United States Army Air Force knew that most of what his forces did in China during World War II contradicted many of the basic, and correct, assumptions made by the United States Army Air Corps before the war.¹⁴⁷

Colonel Edgar Sorenson reminded Commander of the United States Army Air Force Lieutenant General Arnold of training difficulties encountered so far and foreshadowed problems still to come in China after a May 1942 inspection of air schools

¹⁴⁷MAJ Harold McGinnis, Letter to unstated recipient, April 20, 1938, in microfilm 43835 (Colorado Springs, CO: United States Air Force Academy, 1993).

in the United States. Sorenson wrote about diverse subjects such as shortages of manuals and the apparent assumption that bombardiers required no training in their final aircraft types before they deployed to combat. Sorenson also noted that pilot, bombardier, and crew training appeared to be generally poor, that commanders lacked foresight when they chose which types of skills on which their students trained, and that few men could adequately train if their training units lacked adequate equipment. Every one of the problems noted by Sorenson in his inspections in the United States later appeared as a problem in China or India.¹⁴⁸

When the United States Army published *FM 100-20 Field Service Regulations, Command and Employment of Air Power* in 1943, it affirmed several long-held theories of air power and presciently outlined the errors in the command arrangements made for the Twentieth Bomber Command in 1944 and in the Fourteenth Air Force's targeting in 1945. *FM 100-20* demanded that a theater commander possess centralized control of all ground forces and all combat air assets based in his theater, tactical and strategic, and that he exercise his control of aerial forces through a single air forces commander. The manual further directed that the theater commander select targets for strategic air attack and that strategic aircraft only execute tactical attacks when and where the situation was vitally important and the strategic forces could play a decisive role. *FM 100-20* described strategic targets as either important economic targets or critical links in the enemy's lines of communication, which targets both strategic and tactical air assets should attack; the manual clearly spelled out that most lines of communication were not critical targets of strategic importance and implied that strategic links carried vital economic cargo as well

¹⁴⁸COL Edgar Sorenson, *Report of Inspection, 2nd Air Force Units and Bombardier Schools*, in microfilm 43835 (Colorado Springs, CO: United States Air Force Academy, 1993).

as military forces. The contrast between *FM 100-20* and the command structures arranged for Operation Matterhorn, where General Arnold exerted direct control from the Pentagon, is glaring, even considering the convoluted web comprised of three distinct and not fully cooperative national command structures that exerted authority in the China-Burma-India Theater.¹⁴⁹

In China during World War II, the United States war effort began successfully but later degraded under assorted difficulties of theory and execution into a counterproductive effort that worked against American and Chinese interests. Efforts to aid China during the period of its lonely war against Japan, from July 1937 into December 1941, made military and diplomatic sense and achieved useful goals. The small China Air Task Force's aerial guerrilla war during 1942 bore similar fruit. This economy of force theme began to go awry when President Roosevelt consented to transform the China Air Task Force into the Fourteenth Air Force and Lieutenant General Arnold allocated a group of B-24 heavy bombers, among numerous other units, for duty in China. The Twentieth Bomber Command's deployment to China then continued the trend of dispersing critical assets to secondary activities. Near the end of the war, the Fourteenth, flush with units that finally lacked any better employment, conducted operations designed to prevent Japanese forces from doing what Allied planners wanted them to do, and in so doing also worked to destroy the infrastructure of a country which the United States hoped would become a powerful ally in the post-war world. The United States Army Air Force failed in its attempt to successfully wage World War II in China "By Air Power Alone."

¹⁴⁹*FM 100-20*, 1–11.

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